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**STAFF APPRAISAL REPORT**

**INDONESIA**

**SECOND HEALTH (MANPOWER DEVELOPMENT) PROJECT**

**April 24, 1985**

**Population, Health & Nutrition Department**

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## CURRENCY EQUIVALENTS

Currency Unit = Rupiah  
US\$1.00 = RP 1,100  
1,000,000 RP = US\$909.00

## GOVERNMENT OF INDONESIA FISCAL YEAR

April 1 - March 31

## ACRONYMS AND INITIALS

ADB	:	Asian Development Bank
AKPER	:	Nursing Academy
BAPPENAS	:	National Development Planning Agency
ICB	:	International Competitive Bidding
INSTALMED	:	Public Works Unit
IUD	:	IntraUterine Device
LAN	:	Institute of Public Administration
LCB	:	Local Competitive Bidding
MCH	:	Maternal and Child Health
MOH	:	Ministry of Health
MOPE	:	Ministry of Population and Environment
NFPCB	:	National Family Planning Coordinating Board
PCM	:	Protein-Calorie Malnutrition
PIMPRO	:	Provincial Project Officer
PKMD	:	Village Community Health Development Program
PUSDIKLAT	:	Center for Education and Training of Health Personnel
PUSDIKNAKES	:	Center for Education of Health Manpower
REPELITA	:	Five-Year Development Plan
SKN	:	National Health System
SPK	:	Nursing School
UNICEF	:	United Nations Children's Fund
UPGK	:	Family Nutrition Improvement Program
USAID	:	United States Agency for International Development
VCDC	:	Village Contraceptive Distribution Center
WHO	:	World Health Organization

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INDONESIASECOND HEALTH (MANPOWER DEVELOPMENT) PROJECTLoan and Project Summary

Borrower: Republic of Indonesia.

Amount: US\$39 million equivalent.

Terms: Repayable in 20 years, including 5 years of grace, at the standard variable rate.

Project Description: The objectives of the project would be to: (a) help expand the output and improve the quality of Ministry of Health (MOH) paramedical manpower through (i) strengthening the Center for Education of Health Manpower (PUSDIKNAKES) by local and overseas training and local and foreign technical assistance; (ii) providing new and/or improved physical facilities for 32 schools and academies in 18 provinces; and (iii) carrying out three studies required to further develop manpower development policies for the government's fifth Five-Year Development Plan, 1989-1994 (Repelita V) and beyond; and (b) help expand the capacity for and improve the quality of MOH's in-service education and training through (i) strengthening the Center for Education and Training of Health Personnel (PUSDIKLAT) by local and overseas training and local and foreign technical assistance; and (ii) providing new and/or improved physical facilities for eight in-service training centers. The principal direct benefits of the project would be: expansion of the quantity and improvement of the quality of paramedical manpower in the health system; institutional strengthening of the MOH's newly-established centers for in-service and pre-service paramedical training; and contribution to the health manpower policy formulation process for Repelita V and beyond. Because this would be the first Bank-financed project undertaken by two recently established Centers, there is a prima facie risk of some delay in project implementation and of its institution-building goals not being met. The advanced status of preparation of the project's physical infrastructure components and the technical assistance to be provided to the two Centers would reduce this risk.

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**Estimated Costs a/:**

	<u>Local</u>	<u>Foreign</u> (US\$Million)	<u>Total</u>
<b>A. Pre-Service Health Manpower Development</b>			
1. Institutional Strengthening	1.0	3.0	4.0
2. Paramedical Training Institutions	24.8	11.4	36.2
3. Studies	-	0.2	0.2
Subtotal	<u>25.8</u>	<u>14.6</u>	<u>40.4</u>
<b>B. In-Service Health Personnel Development</b>			
1. Institutional Strengthening	0.4	1.7	2.1
2. In-Service Training Centers	8.3	2.5	10.8
Subtotal	<u>8.7</u>	<u>4.2</u>	<u>12.9</u>
<u>Total Base Cost</u>	<u>34.5</u>	<u>18.8</u>	<u>53.3</u>
Physical Contingencies	3.3	1.4	4.7
Price Contingencies	5.2	2.7	7.9
<u>Total Project Cost</u>	<u>43.0</u>	<u>22.9</u>	<u>65.9</u>

**Financing Plan:**

	<u>Local</u>	<u>Foreign</u> (US\$million)	<u>Total</u>
IBRD	17.1	21.9	39.0
Government	25.9	1.0	26.9
<u>Total</u>	<u>43.0</u>	<u>22.9</u>	<u>65.9</u>

**Estimated Disbursements:**

	<u>Bank FY</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
		(US\$ million)				
Annual		7.0	13.3	10.5	5.9	2.3
Cumulative		7.0	20.3	30.8	36.7	39.0

**Rate of Return: Not applicable**

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**a/ Net of duties and taxes.**

INDONESIA

SECOND HEALTH (MANPOWER DEVELOPMENT) PROJECT

STAFF APPRAISAL REPORT

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This report is based on the findings of an appraisal mission that visited Indonesia in October/November, 1984. The personnel involved were: Mr. D. Pearce (mission leader), Ms. N. Sirur (PHN); and Messrs. J.E. Lundeberg and J. Nelson (consultants). Dr. B.H. Liese and Ms. L. Domingo (PHN) assisted in project identification and preparation.

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MAP

IBRD No. 18796R

INDONESIA

SECOND HEALTH (MANPOWER DEVELOPMENT) PROJECT

BASIC DATA

Total area (thousands km <sup>2</sup> ) . . . . .	1,919
Total population (mid-1982 in millions) . . . . .	152.6
Density per km <sup>2</sup> (mid-1982) . . . . .	78
Density per km <sup>2</sup> of agricultural land (mid-1982) . . . . .	471
Annual rate of natural increase (1982) (%) . . . . .	2.1
Crude birth rate (1982) . . . . .	34
Crude death rate (1982) . . . . .	13
Life expectancy at birth (1982) (years) . . . . .	53
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Population per physician (1979) . . . . .	11,530
Nutrition:	
Daily calorie supply per capita (1981) . . . . .	2,342
As percentage of requirement (1981) . . . . .	110
Per capita GNP (1982 in US\$) . . . . .	580

DEFINITIONS

<b>Child Mortality Rate:</b>	Annual deaths of children 1-4 years per 1,000 children in the same age group.
<b>Crude Death Rate:</b>	Number of deaths per year per 1,000 people.
<b>Infant Mortality Rate:</b>	Annual deaths of infants under one year per 1,000 live births during the same year.
<b>Life Expectancy at Birth:</b>	Number of years a new-born child would live if subject to the mortality risks prevailing for the cross-section of population at time of birth.
<b>Maternal Mortality Rate:</b>	Number of maternal deaths per 1,000 births in a given year attributable to pregnancy, childbirth or puerperal complications.
<b>Dinas Kesehatan:</b>	Province Health Officer.
<b>Dukun:</b>	Traditional healer.
<b>Kakanwil:</b>	MOH Provincial Officer.
<b>Kanwil:</b>	MOH Provincial Office.
<b>Panca Karya Husada:</b>	Five key principles of health policy.
<b>Pekarya Kesehatan:</b>	Auxiliary health workers.



## I. INTRODUCTION

1.01 Over the past 10 years, Indonesia's public health system, in particular its rural health service delivery network of health centers and subcenters, has expanded quite rapidly. Despite substantial increases in the output of health manpower of all kinds during this period, manpower demand, particularly for nurses and other technical paramedicals, began to exceed supply. This emerging paramedical manpower shortage has now become a serious problem in three important respects: first, the poor quality of basic health services available at health centers and subcenters, which, indirectly, affects their credibility in the eyes of the population served; second, the inability of the rural health service delivery system to meet the growing demand for clinical family planning services to supplement the distribution of contraceptive pills through the National Family Planning Coordinating Board's (NFPCB) village contraceptive distribution centers; and third, the lack of health center and sub-center staff required to provide technical, supervisory, referral and logistical outreach support to existing village-level primary health care activities. In addition to this quantitative problem, the calibre of available paramedical manpower is low, owing to the absence of systematic in-service education and training, their poor management and technical supervision, and their limited prospects for career development and continuing education, except in the main urban areas.

1.02 During the early 1980s, the Ministry of Health (MOH) began, for the first time in a rigorous way, to address health manpower development problems and short- and longer-term objectives, with technical assistance from USAID and WHO. In this connection, a Bank mission visited Jakarta in late 1981 to review paramedical manpower demand and supply and to assess MOH education and training policies. Following this mission and the completion of a MOH long-term health manpower development plan in early 1983, project preparation was initiated during the last quarter of 1983. Its size and composition emerged from joint discussions between the Bank and the government of long- and short-term priorities and from consideration of the financial and technical assistance already available or planned by other external aid agencies involved, mainly the United States Agency for International Development (USAID), the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), and the Asian Development Bank (ADB). A preparation mission visited Indonesia in March/April 1984 and a Bank-financed consultant assisted in further preparation in July 1984. The project was appraised in October/November 1984.

1.03 The health manpower development project described later in this report is one of three operations currently being processed which together constitute a coordinated package of Bank financial and technical assistance to Indonesia's population, health and nutrition sectors and institutions, the NFPCB and the MOH. The fourth population project (Report No. 5404-IND) addresses the institutional development needs of the NFPCB itself, and also of the Ministry of Population and Environment (MOPE); the health manpower development project deals with the MOH's needs for more and better qualified paramedical staff as noted in para. 1.01 above; and a proposed second nutrition and community health project, appraised in March 1985 will, in part, address the government's policy of integrating, or seeking to

coordinate better, village-level primary health care programs (including family planning and nutrition services) and the support they receive and need from the NFPCB, the MOH and other government agencies. This sequence of projects and the linkages between them support the integrated view of population, health and nutrition sector issues and development reflected in the government's fourth Five-Year Development Plan (Repelita IV).

## II. SECTOR ISSUES AND STRATEGY

### A. The Health Sector in Indonesia <sup>1/</sup>

#### Population Status

2.01 Indonesia's population of about 152.6 million (mid-1982) increased at an annual average rate of 2.1% between 1961-70 and 2.3% between 1971-80. However, this increase in the average growth rate between the two decades as a whole masks a significant declining trend in annual growth rates during the latter period: from 2.6% in 1970 to 2.1% by 1980, owing to lower fertility which, in turn, is attributable inter alia to rising average age of marriage and to increasing and widespread contraceptive use, particularly in Java and Bali. Assuming a reduced 1.9% average annual growth rate through the rest of this century, Indonesia's population is projected to increase to 179 million by 1990 and to about 212 million by the year 2000. In addition to the population's absolute size, the fifth largest in the world, and still high growth rate, two other demographic factors have important implications for the country's overall development efforts: regional extremes in density, ranging from an average of 690 persons per km<sup>2</sup> in Java, where over 60% of all Indonesians live on less than 7% of the country's total land area, to about 3 in Irian Jaya which accounts for more than 20% of total land area; and, increasing urbanization, owing partly to rural-urban migration and partly to higher birth rates in urban, compared to rural, areas. In 1982, urban dwellers accounted for about 22% of total population (up from 15% in 1960) and this proportion is expected to increase to about 36% by the year 2000. The main goals of Indonesia's comprehensive population policy are to reduce further the overall rate of population growth and to improve its distribution; the government's family planning and transmigration programs are the principal instruments of this policy.

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<sup>1/</sup> A more detailed treatment of population, health and nutrition status and sectoral development issues is given in the following Bank reports: Indonesia - Health Sector Overview (Report No. 2379-IND); Indonesia - Appraisal of Provincial Health Project (Report No. 4131-IND); and, Indonesia - Appraisal of Fourth Population Project (Report No. 5404-IND). Data cited in paras. 2.01-2.04 are from World Development Report 1984.

## Health Status

2.02 Despite considerable improvements during the last 20 years, the overall health status of Indonesia's population remains far from satisfactory and is inferior to that of comparable lower income countries. In 1982, life expectancy at birth was 53 years, up from 41 years two decades earlier; the crude death rate was 13 per thousand, about 43% lower than in 1960; and the infant mortality and child death rates were about 102 per thousand live births and 13 per thousand children aged 1-4 years respectively, compared to 150 and 23 in 1960. Significant disparities exist in both mortality and morbidity among Indonesia's widely dispersed regions and, within regions and provinces, between the rural and urban areas--with the average urban resident in Java enjoying much better health status and access to health services than the average rural dweller in the Other Islands. For example, life expectancy at birth in Yogyakarta is 61 years (1980), and in Sulawesi and West Nusa Tenggara only 52 years and 44 years respectively.

2.03 Although Indonesia's epidemiological profile has not changed markedly during the last decade or so, some differences in disease patterns between the economically more advanced urban centers and the less developed rural areas are starting to emerge. Assuming continued socio-economic development and increasing urbanization, this trend can be expected to continue and to have important consequences for the longer-term development of the country's health system. In the short- and medium-term, however, the most prevalent causes of overall morbidity and mortality continue to include respiratory and gastro-intestinal diseases, skin and eye infections, intestinal parasites, and vector-borne diseases, principally malaria. Up to one-half of total mortality (about 992,000 deaths per annum) occurs among children below 5 years of age; and, the leading causes of death among infants (0-12 months) are diarrhea, lower respiratory infections and neonatal tetanus. It is estimated that about 80% of the over half a million infant deaths per annum could be avoided through simple, low-cost therapy and prevention. Considering the high levels of infant and child mortality, the fact that less than half of pregnant women receive basic prenatal care, and that only about 15% of all deliveries are attended by trained personnel of any kind, improved maternal and child health (MCH) services are an obvious priority.

## Nutrition Status

2.04 Although, with recent increases in food production, the daily per capita calorie supply in 1981 (2,342) was 110% of the recommended level, protein-calorie malnutrition (PCM) remains a relatively serious problem. This is largely due to problems of distribution, both among and within families. Current estimates indicate that 15% of the population or about 23 million people, principally the urban poor, small landholders and the rural landless, are malnourished and that, within families, women and children under 5 years are most likely to receive insufficient calories and protein. Indeed, available survey data show that nationwide about 7 million children aged 1-5 years, or about 30% of all preschoolers, suffer

from PCM. With regard to micro-nutrients, vitamin A, iron and iodine are the most important deficiencies. According to 1979 MOH estimates, 15 million people, or 10% of the population, had some form of eye infection or blindness due to vitamin A deficiency; iron-deficiency anemia was found in 28-52% of male workers and in 35-85% of non-pregnant women; and iodine deficiency, which can cause goiter and contribute to cretinism, was found in 50% of those surveyed in Java, Bali and Sumatra.

### Health Policies

2.05 Throughout the 1960s and during the early years of Repelita I (1969-74), the government assigned relatively low priority to health and other social sectors. Public health activities focussed mainly on health education and the prevention of epidemics; consequently, only modest attention was paid to the development of hospital or rural health services. During Repelita II (1974-79) however, a period of rapid economic growth, it accorded high priority to improving access to health services, particularly in rural areas, and, by the late 1970s, each of the country's 3,400 subdistricts had at least one public health center. In addition, total public health personnel nearly doubled; about 47,000 traditional healers (dukuns) and birth attendants were retrained; and legislation was promulgated obligating graduating physicians to serve in rural areas for between 2-5 years at least, depending on the province to which they were posted. This expansion of physical and human resources was accompanied by measures to reduce financial disincentives to health service utilization: in 1979, health center consultation fees were reduced from Rp. 450 to Rp. 150 (US\$0.45 to US\$0.15 equivalent). Despite these developments, the public health system's effectiveness, and specifically the utilization of its hospitals, health centers and subcenters, remained limited--owing partly to sociocultural and behavioral factors, which will only gradually be overcome, and partly to the poor quality of their services, mainly a function of inadequate numbers of qualified personnel. During Repelita III (1979-84), the government's three main priorities were: to continue improving access to health services (particularly in the Other Islands); to strengthen the referral system by improving the efficiency and effectiveness of health facilities; and, to promote improved family health behavior and practices in the community itself through village-level primary health care programs. In this latter connection, considerable initial progress has been achieved in community-level family planning, health and nutrition education and motivation activities--by the NFPCB through its village contraceptive distribution centers (VCDCs), by the MOH Family Nutrition Improvement Program (UPGK) through nutrition education for mothers and children at its village weighing posts, and by the MOH Village Community Health Development Program (PKMD) (para. 2.10 below). These advances were accompanied by significant investments in primary and secondary education and in rural water supply and sanitation, as part of the government's overall approach to improving social infrastructure and services in the rural areas. The government's health priorities and goals for Repelita IV (1984-89) are elaborated further in paras. 2.12-2.13 below.

## Health Organization and System

2.06 The MOH is responsible for the formulation and implementation of national health policy and for the overall administration, coordination and management of the country's health system. It is headed by the Minister, responsible to the President, and consists of the Secretary-General, the Inspector-General, and four Directorates-General: for Community Health, Medical Care, Communicable Diseases and Environmental Health, and Food and Drugs. The Secretariat-General consists of Bureaus for Planning, Personnel, Finance, Logistics, Health Legislation and Public Information, Organization, and General Affairs. An Institute of Health Research and Development, comprising five separate units, is responsible for health research and its Head reports to the Minister. Finally, there are five recently established centers, each responsible directly to the Minister, as follows: the Data Center, the Health Laboratory Center, the Community Health Education Center, the Center for Education of Health Manpower and the Center for Education and Training of Health Personnel. An MOH organigram, reflecting its recent reorganization (Decree No. 15/1984 dated March 6, 1984), is attached as Chart 1.

2.07 At the provincial level, there is a dual management system for public health services, as is the case in some other sectors, comprising: an MOH Provincial Officer (Kakanwil), technically responsible to the Minister of Health, and a Province Health Officer (Dinas Kesehatan), administratively responsible to the Provincial Governor. In practice, one official is both MOH Provincial Officer and Province Health Officer. The Kakanwil's office comprises an administrative division, which includes units for personnel, budget, logistics, and general affairs, and four divisions for planning, medical services, communicable disease control, and food and drugs. Specific programs or projects are the responsibility of project officers (PIMPROs), who are appointed by and report to the Kakanwil. The Province Health Officer is responsible for overall coordination of all public health services in the province. A similar structure prevails at the district level, where the district medical officer is responsible for coordination and execution of all health services at district, subdistrict and community/village level.

2.08 Indonesia's health care delivery system consists of a network of primary, secondary and tertiary facilities. However, the principal source of modern public health services for the 120 million Indonesians who live in rural areas is the primary-level system of health centers, subcenters and mobile centers under the technical responsibility of the Directorate-General of Community Health. Health centers provide basic medical care, MCH services, family planning services, communicable disease control (including immunizations), hygiene and sanitation, nutrition, community health education, school health and dental treatment. Their staff are also responsible for recording vital statistics and health information reporting. According to current MOH standards, the number and type of paramedical staff varies according to region: up to 14 (5 nurses, 7 auxiliary health workers, 1 sanitarian and 1 dental nurse) in the 2,556 health

centers located in Java and Bali; an average of 8-9 (3 nurses, 4 auxiliaries, 1 sanitarian and 1 dental nurse) in the 1,113 centers in North and South Sulawesi, North, South and West Sumatra, and Lampung; and 5-6 (2 nurses, 2 auxiliaries, 1 sanitarian and 1 dental nurse) in the remaining 1,684 centers in other provinces. In practice, however, and except for auxiliaries, these staffing standards are satisfied only in the larger, urbanized communities, owing to a shortage of fully qualified nurses and other technical paramedicals. Most health centers are currently staffed on average by 1 or 2 nurses and a few auxiliaries, supervised in about 80% of centers by recently graduated physicians fulfilling their rural service obligation. In 1983/84, there were about 5,353 health centers throughout the country, serving an average population varying from 8,000 to 35,000 per center, according to province. Although the MOH's policy objective of one health center per 30,000 population has been achieved as a national average, coverage is significantly less in West, Central and East Java and North Sumatra (1 per 30-45,000 population). During Repelita IV, MOH plans to construct 500 new health centers, of which about 200 in these four provinces; and, to add in-patient facilities (10-15 beds) to about 170 existing centers, making a total of about 300 centers (5% of the total by 1988/89) with an in-patient capability. In the longer-term, MOH plans to have 20% of all health centers with such in-patient facilities, for which a necessary criterion is a minimum full-time staff of one doctor and six nurses.

2.09 Below and linked to health centers, health subcenters in the main villages provide basic MCH care, including vaccination and health education. Each subcenter, of which there were 13,636 in 1983/84 serving an average population varying from 3,000 to 10,000, is supposed to be staffed by 1 nurse and 1-2 auxiliaries, according to region. However, many subcenters function only on certain days of the week, owing to staff shortages. During Repelita IV, MOH plans to build 6,000 new subcenters, making a total of about 19,636 by 1988/89, at which time its objective of 3-4 satellite subcenters per health center would be substantially achieved. Finally, there were about 2,479 mobile health centers in 1983/84, consisting of an ambulance staffed by a doctor, nurse, auxiliary, sanitarian and driver, and based either at a local district hospital or a health center. An additional 1,500 mobile centers, which provide only basic health care to surrounding villages, are planned to be introduced during Repelita IV.

2.10 The outreach of this primary-level system of health centers and subcenters to the community has been an important government concern during the last few years. In 1977, a Village Community Health Development Program (PKMD) was introduced, under which village health volunteers were selected by the community and given limited training in nearby health centers. The volunteer was expected to provide, on a part-time basis, simple preventive and curative care, be responsible for about 30 families, and be paid in cash or kind by the community. To date, this program has achieved modest success. Although MOH originally planned to train about 100,000 volunteers from 5,000 villages to cover 6% of the population by

1983/84, PKMD activities had been initiated in only about 700 villages by early 1982. Qualitatively, the program was found to have had positive results in some pilot villages but an evaluation conducted under UNICEF auspices in 1982 suggested that its replicability and extension would depend upon the degree of community involvement and political commitment of the kind enjoyed by the family planning program, and adequate technical, supervisory, referral and logistic support, as well as continuous education and supervision from the health center system. Furthermore, the effectiveness of the PKMD program had been further inhibited by the fact that volunteers had to work alongside paid family planning, nutrition and community development workers. For all these reasons, a very high drop-out rate was experienced. In the circumstances, the evaluation concluded that further development of these and similar initiatives based on volunteer efforts should be accompanied by adequate support from health centers and sub-centers which, in turn, must be appropriately staffed by professionally trained health workers, i.e. nurses and technical paramedicals. Experience with similar outreach programs and efforts in other countries supports the validity of these findings. The government's strategy during Repelita IV is to integrate, or coordinate better the delivery of, village-level primary health care services at existing village service delivery points-- either NFPCB's village contraceptive distribution centers or the MOH's village weighing posts (UPGK).

#### Health Financing

2.11 Total health expenditure in 1982/83 was an estimated Rp. 1,482 billion (US\$1.35 billion equivalent), or about Rp. 9,712 (US\$8.83 equivalent) per capita, and 2.7% of GDP. Although per capita expenditure has probably doubled in real terms since 1972/73, Indonesia still spends significantly less on health than many other countries at comparable income levels. Private sources of funding (household payments for private and public services, drug purchases and insurance contributions) account for about 64% of total health expenditure and the private sector provides about 59% of the country's health services, almost exclusively in the main urban areas; by contrast, the public sector is the principal source of modern health services for the 120 million Indonesians living in rural areas. In this connection, public health expenditure--per capita, as a proportion of GDP and of total central government spending--remains extremely low in relation to other comparable countries. For example, although the health sector's share of total central government expenditure increased from about 2% in 1977/78 to about 2.5% in 1981/82, it remained substantially below the levels allocated in China (4.9%), the Philippines (5.0%) and Thailand (4.3%) in 1981. Health sector financing issues in Indonesia are extremely complex and, given the population's low health status and the country's currently constrained resource position, increasingly important. The government, specifically BAPPENAS and the MOH, has begun to address some of these issues (health insurance, the recurrent cost implications of the Repelita IV health sector investment program, and the pattern of central and provincial government funding of health services) with technical assistance from USAID, WHO and, in the context of economic and sector work, from the Bank.

### Recent Developments (Repelita IV)

2.12 In 1982, the MOH finalized a policy document entitled National Health System (SKN) which, for the first time, establishes a broad conceptual foundation for the long-term development of Indonesia's health system. In addition, it provides a planning and programming framework for Repelita IV within the perspective of specific national public health goals to be achieved by the year 2000. The latter include: an increase in average life expectancy at birth to 60 years; a reduction in infant mortality to 45 per thousand live births; a 50% reduction in the incidence of most communicable diseases; and, a 67% reduction in protein-calorie malnutrition in children under five years. The realism or otherwise of these long-term goals is difficult to determine, owing inter alia to the lack of accurate base-line data for these indicators. Moreover, the MOH and BAPPENAS (the National Development Planning Agency) have only recently begun to assess their feasibility in terms of the financial resources required and available. On the other hand, there is no question about their appropriateness in terms of the population's basic needs, nor about their complementarity to the government's demographic or fertility reduction goals. The definition of long-term objectives is also an essential prerequisite for establishing political commitment and for medium-term planning.

2.13 Against this background, Repelita IV identifies five key principles (Panca Karya Husada) as the basis of health sector policies, programs and activities during the 1984-89 period, as follows:

- (a) strengthening health service delivery, including measures to support and expand primary health care activities at the community/village level;
- (b) strengthening health manpower development;
- (c) expanding activities to improve nutrition, potable water supply, and environmental health;
- (d) establishing programs to strengthen the overall management of the health system; and
- (e) improving the supply, distribution and quality of drugs, medicines and medical equipment.

The establishment of health manpower development as the second-highest priority is, in the context of Indonesia's health sector, significant evidence of political and bureaucratic commitment. In view of its relevance to the background and rationale for the project and loan recommended later in this report, health manpower is discussed in more detail in paras. 2.14-2.27 below.

### B. Health Manpower

2.14 During Repelitas II and III, while the rapid development of the primary-level system of health centers and subcenters was underway, it was recognized that the potential of these service facilities would not be fully realized unless similar efforts were made to develop sufficient numbers of adequately trained personnel. However, despite substantial increases in health manpower (albeit from a very low base), it was clear by the early 1980s that the demand of the public health system (including hospitals) for nurses and other technical paramedicals was outstripping the supply. In addition, the quality of available paramedical manpower was



low, owing to the absence of systematic in-service education and training, poor management and technical supervision, low salaries, and their limited prospects for career development and continuing education, except in the main urban areas. Finally, a reduction in the number of different categories of nurses--from 22 to 2--and corresponding adjustments in nursing schools and curricula temporarily exacerbated both the supply and the quality problems. In the circumstances, during Repelita III, the MOH began, for the first time in a systematic way, to address these problems and to consider both short- and longer-term health manpower development objectives. One of its first steps was to prepare an inventory of existing manpower of all kinds and, taking into account the long-term national public health goals noted above (para. 2.12), to develop alternative projections of requirements for Repelita IV and beyond. At the same time, and with assistance from USAID, WHO, and a Bank mission that visited Jakarta in late 1981, it began the process of assessing both qualitative and systemic issues.

2.15 The report and principal short-term recommendations of the above-mentioned Bank mission may be summarized as follows: (a) the output of community health and hospital nurses should be increased through the establishment of additional nursing schools (SPKs) and academies (AKPERs) respectively, in the provinces of greatest need; (b) the output of technical paramedicals (dental nurses, laboratory assistants, pharmacists, radiologists, physiotherapists, anesthesiologists, medical analysts and health inspectors/sanitaricians) should also be increased through the establishment of additional schools (public and private); (c) the quality of all categories of health manpower (graduate and paramedical) should be improved through the establishment of additional in-service training centers; and (d) the management of health facilities, specifically hospitals, and the supervision of health manpower in hospitals and health centers should be strengthened through: the establishment of a new cadre of professionally trained hospital managers/administrators; the creation of a functional supervisory hierarchy within the nursing stream; and the expansion of management training seminars, particularly at the provincial level. In addition, the report included a number of longer-term policy and process recommendations: the creation of a single, national health manpower data base and information system; the development of career development, staff compensation, and continuing education policies and procedures for all categories of health manpower; the improvement of coordination between public and private sector training institutions in the interests of efficiency, particularly in underserved provinces; and, the redefinition of central and provincial roles and responsibilities for health manpower education and training, in line with the government's and MOH's overall decentralization strategy.

#### Long-Term Health Manpower Development Plan

2.16 Progress to date and the current status of MOH action on the short- and longer-term recommendations outlined above include the following. First, and understandably in light of the paramedical manpower

shortage that catalyzed the process, the MOH prepared a long-term health manpower development plan covering the three Repelitas through the year 2000 (Repelitas IV-VI). This plan projects manpower requirements by category and by program area based on the health status and health service targets established for the three periods concerned. During Repelita IV, for example, MOH plans to increase its overall manpower by about 75%, from about 162,000 at present to about 284,000 by 1988/89. Of this total, paramedicals would double, from about 56,700 to about 114,700, of which nurses would increase from about 44,650 to 76,240 (71%) and technical paramedicals from about 12,050 to 38,460 (219%). In addition, the number of auxiliary health workers (pekerja kesehatan) would increase from about 29,470 to about 50,460 (71%). A breakdown of existing (1983/84) and planned (1988/89) health manpower by category and by program area is at Annex 1, Tables 1 and 2.

2.17 Second, and with reference to the short-term quality and management/supervision recommendations noted above (para. 2.15), the MOH plans to increase significantly both the capacity and the quality of its existing in-service training system, partly with technical assistance already available from USAID (long-term) and WHO (short-term) and partly with financial and technical assistance under the project described later in this report and a project proposed by ADB. Third, MOH senior staff at the central, provincial and district levels are undergoing training, individually and in groups, at a variety of public health, management, and health planning courses and seminars, both in-country and overseas, under USAID and WHO auspices and with Bank assistance under the provincial health project (Loan 2235-IND). Fourth, with WHO technical assistance, a bachelor's degree-level curriculum in nursing has been developed and was introduced at the University of Indonesia, School of Public Health in 1984/85.

2.18 As far as the longer-term policy, process and institutional development recommendations are concerned, the MOH is currently developing a manpower data and information system as the necessary basis for defining systematic personnel administration, staff compensation and career development policies and procedures. This process is the main focus of a health manpower planning technical assistance project financed by USAID. Second, and with regard to training and organizational issues specifically, plans are underway to establish provincial-level education and training divisions starting in the Kanwils of five provinces (East, West and Central Java, North Sumatra and South Sulawesi) as a first step towards strengthening and decentralizing responsibility for pre- and in-service training at the provincial level. Finally, and in order to strengthen the MOH's central managerial, supervisory and technical support for paramedical training and for in-service education and training, the former Center for Education and Training was reorganized in mid-1984 into two new and expanded centers: one for (pre-service) Education of Health Manpower (PUSDIKNAKES) and one for (in-service) Education and Training of Health Personnel (PUSDIKLAT). The establishment of separate centers for pre- and in-service training will ensure that adequate attention is paid to both. Organigrams showing the structure of PUSDIKNAKES and PUSDIKLAT are attached as Charts 2 and 3, respectively.

2.19 In summary, a very substantial agenda of health manpower development work has been defined, within the framework of a long-term health manpower development plan. Activities have been initiated in most of the priority areas concerned, with existing and planned external financial and technical assistance from USAID, WHO, the Bank and ADB. In this context, the priority attached to increasing the supply of paramedical manpower during Repelita IV is clearly warranted. The shortage of nurses, already an acute problem in Repelita III (paras. 2.08-2.10), is likely to worsen as needed increases in health centers and subcenters are undertaken during Repelita IV. Currently, there is only one fully qualified nurse per 3,418 population nationwide and in some provinces (East, Central and West Java, for example) the ratio is only one nurse per 6,113, 7,654 and 9,868 population respectively. Moreover, of the total 42,400 nurses currently employed by the MOH, about 31,700 or 75% work in hospitals and only 10,700 or 25% in community health centers and subcenters--less than two on average per health center and about 0.56 per health center/subcenter combined. Similar shortages are evident in other paramedical specialities, including dental nurses, sanitarians, assistant nutritionists, assistant pharmacists, medical analysts, physiotherapists, assistant radiologists and laboratory technicians, all of whom are needed in varying numbers for both the primary-level network of health centers and subcenters (sanitarians and dental nurses) and the secondary-level system of hospitals, clinics and laboratories. In addition, the NFPCB's strategy to improve the quality of family planning services (by promoting the use of more effective family planning methods such as the IUD, injectables and implants) will generate increasing demand for qualified nurses at health centers and subcenters. Finally, as noted in para. 2.10 above, the success of village-level primary health care programs is highly dependent on adequate support from health centers and subcenters and the numbers and quality of their staff.

#### Paramedical Manpower Training

2.20 Paramedicals for all levels of the public health system are recruited almost entirely from the 165 paramedical training schools and academies operated by MOH central and provincial authorities. There are also about 100 private institutions, including 59 nursing schools and 27 assistant pharmacists' schools, but their output is channeled mainly to the private sector's hospitals and clinics in the main urban areas. Similarly, the Armed Forces' 23 schools and academies provide staff for military health facilities entirely. Annex 1, Table 3 lists the existing inventory of paramedical training institutions by province and manpower category.

2.21 The MOH's institutions offer three-year courses to 120 students (3 classes of 40 each), who must be junior and senior high school graduates before entering a school and an academy respectively. Both schools and academies, although operated by the MOH, are accredited by the Ministry of Education and Culture. Assuming an average annual attrition rate of about three students per class (7.5%), the MOH estimates that up to about 6,100 paramedicals graduate each year from its 141 schools and 24 academies. However, the quality of education offered is far from uniform, owing partly

to inadequate physical facilities and insufficient equipment, books and teaching materials in many institutions. A significant proportion of all schools and academies, perhaps as high as 40%, are housed in temporary facilities, without proper demonstration or laboratory facilities, discussion rooms and, in some cases, basic teaching space. Others, functioning in MOH facilities designed originally for other purposes, lack sufficient equipment, vehicles (for field practice), library books and other teaching materials needed for a quality training program. In addition, many institutions, particularly those in rural areas, face shortages of full-time teachers (the MOH's norm for schools is 1 full-time teacher per 10 students and for academies 1 teacher per 6 students); they are therefore obliged to operate with less than the required establishment of full-time teachers (6-8 on average), relying on local medical practitioners, nurses, and other health professionals to teach selected classes and subjects.

2.22 Against this background, and given the manpower goals established for Repelita IV and beyond, the MOH's strategy for increasing the output of paramedical manpower, while at the same time maintaining, if not improving, its quality, may be summarized as follows. First, to help satisfy urgent, short-term needs during Repelita IV, it has adopted two temporary expedients: the introduction of "parallel classes," i.e. supplementary classes of up to 40 students each in selected existing schools and academies; and, the expansion of the category of auxiliary health workers (pekarya kesehatan) who, with three months' basic training, will be posted as aides to nurses and technical paramedical staff. To date, about 280 parallel classes have been introduced in both MOH and private schools and academies, and a total of about 300 is planned during Repelita IV: 220 in MOH facilities and 80 in private institutions. Given the priority need for nurses, about 85% of all parallel classes are or will be in nursing schools and academies. The MOH estimates that about 31,000 additional paramedicals will have graduated from parallel classes by 1988/89 which, together with regular class graduates (about 30,500 over 5 years), will result in a total output of about 61,500 paramedicals during Repelita IV. The shortfall between this output and the MOH's estimated manpower requirements for its 15 programs would be met through the training of "pekarya kesehatan."

2.23 Second, to expand its longer-term capacity for paramedical manpower training, the MOH plans to increase the number of its schools and academies. Based on existing academy/school size standards (120 students) and estimated long-term manpower needs, the MOH has calculated that up to about 260 additional schools and academies may be needed by the year 2000. However, this long-term objective, and the assumptions on which it is based, is essentially an indicative planning target and will need to be reviewed periodically in the light of changing circumstances. Indeed, both the recurrent cost implications of the long-term manpower plan and the capital and recurrent costs of the additional training institutions required will need to be analyzed during Repelita IV in terms of the financial resources needed and available to the MOH. Meanwhile, the government has sanctioned a limited investment program for 90 institutions during Repelita IV: construction of 48 new schools and academies; and

rehabilitation or construction of permanent facilities for 42 existing schools and academies currently functioning in temporary, borrowed facilities. Some of the new academies will be developed in groups of two or three technical streams on the same site, partly for economy in construction and partly with a view to developing a common core curriculum and teaching for the different technical sub-disciplines or "streams" in these "multi-stream" institutions.

2.24 Third, in order to increase the supply of full-time teachers, an abbreviated three-month teacher training course has been introduced, together with parallel streams in each of the four teacher-training schools' regular one-year diploma courses. Teachers attending the three-month course will cover substantially the same curriculum as the regular one-year course, but with longer classes each day and reduced time available for teaching practice and individual study.

2.25 Fourth, the MOH plans to strengthen significantly its in-service education and training system, partly to strengthen the managerial and supervisory skills of MOH staff as a whole and partly to remedy potential deficiencies in pre-service paramedical training arising from the expanded output described above. In this connection, it plans to increase the number of in-service training centers, from 10 at present to 24 by the end of Repelita IV and, ultimately, to 37, i.e. at least one per province. To this end, improved curricula and courses are being developed centrally and also, with USAID technical assistance, in selected provinces and a corps of full-time trainers, themselves trained in adult learning and public health, will be recruited to guide and supervise these centers.

2.26 Finally, as noted above (para. 2.18), two new centers have been created at the central level to manage, supervise and coordinate the above activities, in consultation with the province-level authorities concerned, and, in the long-term, to guide and provide technical assistance to MOH's schools, academies, and centers in the provinces.

### Issues and Constraints

2.27 The near-term paramedical manpower development strategy outlined in paras. 2.22-2.26 above is reasonable and well justified in terms of immediate needs during Repelita IV. It nevertheless raises several issues and questions that will need to be addressed during this period. First among these is the feasibility in terms of financial resources available and required of the MOH's long-term health manpower development plan, specifically the further growth in manpower envisaged during Repelitas V and VI (1989-99). Given the country's overall resource constraints, the impact of measures such as integrating village-level primary health care services on the efficiency and effectiveness of health manpower, and the potential role of the private sector, a mid-term review of these long-term manpower targets will be needed. Second, and a related question, the cost-effectiveness and technical advantages of a planned transition towards multi-stream training institutions (para. 2.23 above) needs to be evaluated, taking into account the constraints imposed by Indonesia's size,

diversity, and the relative immobility of its population. Third, with the expansion of the category of auxiliary health workers (pekerja kesehatan), their future role and career development prospects in the public health system will require careful consideration and the development of a policy and plans for their longer-term utilization and appropriate in-service training. Finally, and of more immediate concern, is the question of parallel classes. While parallel classes are acknowledged to be a necessary and temporary expedient aimed at increasing output of paramedicals, particularly nurses, during the next five years, and their introduction may well encourage increased efficiency in the use of training resources, there is a need to assess their impact on both efficiency and training quality during Repelita IV. Such an assessment should also consider the need for and desirability of their continuation and, if so, on what basis, during Repelita V. The government's plans for dealing with these issues, with Bank assistance in the context of the proposed project, are described later in this report.

### C. Bank Role and Assistance Strategy

2.28 Bank Group assistance for population in Indonesia began in 1972 with a US\$13.2 million credit for a first population project (300-IND). Since then, two additional loans totalling US\$59.5 million have been made for second and third population projects (1472- and 1869-IND) and a US\$46 million loan for a fourth population project is planned for presentation to the Executive Directors on May 7, 1985. The principal objective of all four population projects has been to develop the institutional capability needed for planning, coordinating and implementing Indonesia's population and family planning program and to extend its coverage throughout the country. Commencing in 1977, the Bank's population, health and nutrition (PHN) activities were extended to include support for health and nutrition explicitly. A US\$13 million loan for nutrition (1373-IND) and health components totalling about US\$39 million, included in larger agriculture rural development and urban projects as well as the population and nutrition projects, were approved during the late 1970s. In 1983, a first health loan totalling US\$27 million (2235-IND) was approved, the main objective of which is to increase the effectiveness and efficiency of the public health service delivery system in three provinces of Sulawesi through investments in the referral system (district hospitals and health centers), three provincial in-service training centers, malaria control, district-level administration and management training, and technical assistance services. The first and second population projects were completed in 1981 and early 1984, respectively, and the third was completed on schedule in March 1985. A draft project performance audit report has been prepared for the first population project, and has stressed the importance of a clear understanding of the priorities, interests and plans of other co-financing agencies.

2.29 The above broad-based portfolio of population, health and nutrition financial and technical assistance activities reflect the priorities and evolution of government policies, programs and institutions in these

areas during the last decade. In terms of policy, the government already addresses the population, health and nutrition sectors as a comprehensive whole and in terms of activities, programs and services, it plans to emphasize an integrated approach during Repelita IV. The Bank's role, assistance strategy and pipeline of proposed projects is thus designed to support and reinforce this approach. This will imply inter alia continued support for population and family planning, mainly through the NFPCB, and significantly increased assistance for health and nutrition, mainly through the MOH. As far as population and family planning are concerned, a fourth loan is expected to be presented to the Executive Directors later this fiscal year (para. 2.28). Regarding health and nutrition, the principal mid-term focus of Bank assistance is to help the MOH implement three of its five key priorities for Repelita IV, namely, the development of health manpower, the strengthening of community-level primary health care programs, and the improved effectiveness and efficiency of the public health service delivery system. These health and nutrition activities will also directly support and complement the government's overall population and family planning goals. Thus, in addition to the project described later in this report, a second nutrition and community health project was appraised in March 1985 and a second provincial health project is expected to be prepared for appraisal in FY86. A modest program of economic and sector work and related policy studies (some included in these projects) will provide support for these operations.

### III. THE PROJECT

#### A. Project Concept and Main Features

3.01 Given the need for additional paramedical manpower of all kinds, particularly of nurses, the project's overall context is firstly, the MOH's long-term health manpower development plan, which sets quantitative targets for increased output of nurses and technical paramedicals and for in-service training of all MOH personnel over the next three five-year development plans (1984-99) and secondly, the institutional development, including policy, measures required at the MOH central, provincial and training institution levels to strengthen both the pre-service paramedical manpower training system and the in-service training system (paras. 2.16-2.26 above). Regarding the former, the project's main goal is to help the MOH expand and improve its physical capacity for pre-service paramedical manpower education and for in-service training; and, regarding the latter, the project's key objective is to help strengthen the two MOH central institutions concerned (and, through them, selected provincial units and training institutions) and the development of MOH manpower development policies for the longer term.

3.02 Against this background, the project's principal operational objectives would be as follows:

- (a) to help expand the output and improve the quality of MOH paramedical manpower through (i) strengthening the Center for Education of Health Manpower (PUSDIKNAKES) by local and overseas training and local and foreign technical assistance; (ii) providing new and/or improved physical facilities for 32 schools and academies in 18 provinces; and (iii) carrying out three studies required to further develop manpower development policies for Repelita V and beyond; and
- (b) to help expand the capacity for and improve the quality of MOH's in-service education and training through (i) strengthening the Center for Education Training of Health Personnel (PUSDIKLAT) by local and overseas training and local and foreign technical assistance; and (ii) providing new and/or improved physical facilities for eight in-service training centers.

### B. Detailed Project Description

#### Pre-Service Paramedical Health Manpower Development

##### Institutional Strengthening

3.04 The overall mandate of PUSDIKNAKES, following its establishment under Presidential Decree No. 15/1984, is to provide managerial, supervisory and technical support and guidance to the MOH's pre-service paramedical manpower training system, currently comprising 165 schools and academies located throughout Indonesia. Its senior staffing being completed, PUSDIKNAKES is, at present, in the process of organizing itself for this purpose and, in the near term, its principal priorities include the recruitment of additional staff and their training, and the definition of a work-plan of priority operational activities to be carried out during Repelita IV. While the administration and coordination of the planned additional output of manpower required during the next five years is an obvious and pressing priority, the development of PUSDIKNAKES itself and its support role for the system as a whole is no less urgent or important. In this context, the project provides for 192 manmonths (168 foreign and 24 local) of technical assistance services to help PUSDIKNAKES with its organizational development, management and planning; curriculum development; the development/improvement of systems for technical supervision and support of educational programs, and their evaluation and monitoring; and manpower data collection and processing. Furthermore, a total of 35 fellowships--6 long-term (108 manmonths) and 29 short-term (87 manmonths)--would be provided under the project to promote PUSDIKNAKES' staff development. Courses of study to be undertaken would include management and planning, evaluation, manpower planning and technical subject areas. Finally, funds are also provided for group educational activities (i.e., workshops and seminars), which would promote systematic dialogue between provincial and PUSDIKNAKES staff on issues relating to management and educational quality in paramedical training institutions.



3.05 Second, it is the MOH's longer-term strategy, given the country's size and diversity, to transfer technical and institutional support (and, ultimately, full responsibility) for health manpower development to the province level, initially to those provinces where, for reasons of size and/or the experience and capability of the MOH provincial authorities concerned, such decentralization would result in improved effectiveness and efficiency. Accordingly, as a first step, the MOH plans to create education and training divisions in the five Kanwils of East, West and Central Java, North Sumatra and South Sulawesi during Repelita IV, thereby establishing a province-level focus of commitment and technical responsibility for health manpower development, like that already in place in all Kanwils for medical services, communicable diseases control, food and drug administration and planning (para. 2.07). These divisions would be technically responsible to PUSDIKNAKES and administratively accountable to the Kanwil. Their functions, like those of PUSDIKNAKES at the national level, would include coordination of all training activities and technical support and guidance to the schools and academies within their jurisdiction through field visits and group educational activities, such as workshops, seminars, and faculty exchanges of experience. They would also be a link between PUSDIKNAKES in Jakarta and individual schools and academies. To improve the capacity of the selected Kanwils' offices to perform required management functions and provide technical supervision and support to schools/academies in their respective provinces, the project provides funding for 10 short-term fellowships (2 per province) as well as group educational activities (workshops and seminars) in management and planning and technical subject areas. The five provincial education and training divisions would also receive sustained technical supervision and assistance from PUSDIKNAKES staff and the project-financed consultants based at PUSDIKNAKES. In this connection assurances were obtained during negotiations that the MOH would establish by March 31, 1986 and thereafter maintain provincial education and training divisions in East, West and Central Java, North Sumatra and South Sulawesi.

3.06 Third, and related to this organizational development initiative, the MOH plans to select 10 schools and/or academies, representing each of the technical sub-disciplines or paramedical manpower categories, and develop them as centers of excellence. The long-term goal would be to strengthen the capability of these institutions' faculty and administrators to the point where they could support the technical and institutional development needs of other schools and academies of the same sub-discipline in the same, or adjacent, province or region. The proposed strengthening of selected institutions by PUSDIKNAKES, directly or, in the five provinces concerned, through the planned provincial education and training divisions, would include: staff development activities; the redirection of teaching methods towards more job-oriented, problem-based experiential learning; the improvement of evaluation instruments and techniques for assessing student and teacher performance; and, the creation of systematic opportunities for faculty and planners to exchange experience, expertise and ideas about technical and institutional developments. To help develop the technical knowledge/skills of the faculty of the 10 selected training institutions

the project would provide 36 long-term fellowships (648 manmonths) in technical subject areas, and funds for group educational activities (workshops and seminars). Assurances were obtained during negotiations that the MOH would designate the 10 schools/academies to be strengthened by December 31, 1985.

3.07 In summary, this component of the project includes funds for a total of 873 manmonths of fellowships and 156 manmonths of technical services. For long-term fellowships, a small amount of funding is included in the project for in-country English language training. A tabulation of proposed fellowships and technical services is contained at Annex 3, Table 3. Selection of fellows, their placement in appropriate courses of study and their assignment upon return to Indonesia would be the responsibility of the MOH, with assistance from WHO which has extensive experience in managing and facilitating fellowship programs in the health field (see para. 4.09 and 5.07 for specific arrangements).

#### Paramedical Schools and Academies

3.08 As noted earlier in this report, the MOH plans to establish 48 new schools and academies and to rehabilitate (or provide new, permanent facilities for), 42 existing schools and academies: a total of 90 institutions during Repelita IV. The 48 new schools and academies, part of the additional training infrastructure required in the longer-term, were selected on the basis of several criteria, including the following: provinces and manpower categories of greatest need; overall health status (infant mortality and life expectancy) by province; geographical distribution of training facilities required in the long-term; and site acquisition or availability. The 42 existing schools and academies are those currently operating in the most inadequate temporary or borrowed facilities (some for many years). An additional criterion for the 32 institutions included in this component of the project was the availability of external assistance, already committed or planned, by other agencies, specifically ADB with whom the government and the Bank is coordinating project preparation and implementation.

3.09 Taking into account these considerations, the project would provide funds for physical development [civil works, equipment, furniture, vehicles (2 per institution) and books and teaching materials] for 21 schools (6 new and 15 existing) and 11 academies (7 new and 4 existing), of which 4 academies would be single stream and 7 would be multi-stream (i.e. grouped in 2 or 3 technical subject streams on the same site and sharing common dormitory, dining, library and auditorium space). The total of 32 project institutions would be located in 18 provinces: 14 in the 5 provinces of Java; 12 in 8 provinces of Sumatra and Sulawesi; 1 in the province of Bali; and the remaining 5 in 4 eastern provinces. All 7 multi-stream academies would be located in urban areas in Java, West Sumatra, and South Sulawesi where, for reasons of cost, size, and technical need, the feasibility of "multi-streaming" appears most promising. Finally, of the total 32 project institutions, 10 would be nursing schools or academies

(excluding 4 nursing streams in 4 of the multi-stream academies) and the rest schools or academies for assistant pharmacists, medical analysts, laboratory assistants, sanitarians/health inspectors, and dental assistants. A list of project institutions is contained at Annex 3, Table 2.

3.10 In connection with the support provided for multi-stream academies which, as indicated in the preceding chapter of this report, is a new development for Indonesia's health sector, assurances were obtained during negotiations that the MOH would: (a) take steps to develop common core curricula for the different paramedical categories in the planned multi-stream academies; (b) introduce multi-stream classes and programs on a pilot basis in the 7 multi-stream academies included in the project; and (c) based on this experience, establish a policy for future multi-stream paramedical manpower education and training not later than April 1, 1988. In addition, and partly related to the multi-stream approach, as well as the lack, to date, of consistent MOH design standards for schools and academies, assurances were obtained during negotiations that the MOH would develop systematic, cost-effective space allocation and design standards not later than June 30, 1986. In establishing these standards, the MOH would take into account the space allocation agreed for the first batch of project institutions during appraisal.

#### Studies

3.11 In addition to the two project-related actions noted in para. 3.10 above, there are three other sub-sectoral questions or issues which, as discussed in para. 2.27 above, the MOH needs to address during Repelita IV. These are: the financial feasibility (capital and recurrent costs) of the long-term health manpower development plan's targets for the year 2000; the future role and career development prospects of pekarya kesehatan; and, the impact on both efficiency and training quality of parallel classes. During appraisal, the MOH requested that technical assistance be included in the project to help it undertake the necessary studies, all three of which may have significant implications for preparation of Repelita V. Accordingly, the proposed loan would include a small allocation (US\$150,000) for short-term local and/or foreign consultancies that may be needed for any or all of these three studies. Accordingly, assurances were obtained during negotiations that: (a) the MOH, in consultation with BAPPENAS, would assess the financial resources required and available to achieve the long-term health manpower development plan's targets through the year 2000, under terms of reference acceptable to the Bank, not later than June 30, 1986; (b) the MOH would review the functions, status and longer-term role of pekarya kesehatan, not later than December 31, 1986 and define a plan for their longer-term utilization, career development, and training, not later than April 1, 1988; and (c) the MOH would evaluate the impact of parallel classes on both the efficiency and training quality of the schools and academies concerned, not later than December 31, 1986 and define a plan or policy for their continuation or otherwise not later than April 1, 1988 taking into account the results of this evaluation. Terms of

reference for these studies have been prepared and were discussed and agreed at loan negotiations.

### In-Service Health Personnel Development

#### Institutional Strengthening

3.12 The basic functional responsibility of PUSDIKLAT, under Presidential Decree No. 15/1984, is similar to that of PUSDIKNAKES, but with reference to in-service training and, in principle, for the entire public health system, not only paramedicals (although they are quantitatively the largest professional group). Like its sister center, PUSDIKLAT is currently in the process of organizing itself to face the very substantial in-service training burden that the additional numbers of MOH staff entering the system during the next five years (mainly paramedicals) will impose. However, while the potential clientele for in-service training is much larger than that of pre-service paramedical training, the physical and human resources available are significantly smaller: in 1983/84, only 10 permanent training facilities--4 national in-service training centers and 6 provincial centers of which 3 are currently under construction in Sulawesi under the Bank-financed provincial health project (Loan 2235-IND). Except for the latter 3, these centers are all in poor physical condition (having been built in some cases over 30 years ago), too small for current requirements, and lacking basic teaching aids, equipment and books. Consequently, training strategies and methods have hitherto been overly classroom-oriented, with minimal scope for discussion, simulation exercises, and field and work experience practice. Consistent with the decentralization strategy referred to above (para. 3.05), the MOH's long-term plan is to have 37 in-service training centers (1 in each province plus 4 national and 6 regional centers) and, during Repelita IV, to establish 21 (4 national, 3 regional, and 14 provincial), although not all with permanent facilities.

3.13 In addition to its responsibility to coordinate, and in some instances directly conduct, short in-service training courses of all kinds for the entire public health system, PUSDIKLAT also trains the trainers for its own centers and for pre-employment and other in-service training courses conducted by the four MOH Directorates-General. Moreover, with effect from Repelita IV, PUSDIKLAT will be responsible for conducting obligatory public administration and management training for MOH echelon III and IV personnel, hitherto carried out directly by the National Institute of Public Administration (LAN). In the circumstances, one of PUSDIKLAT's main operational priorities during Repelita IV is to strengthen greatly the number and quality of trainers, at national, regional and provincial level. As far as its in-service training strategy is concerned, it will place emphasis on enabling course participants (both medical and paramedical) to transfer their knowledge, skills, and experience to hospital and health center clients as well as to individuals and groups in villages and urban communities, so that the population at large gradually learns how to prevent illness through modern and improved health behavior and practices. At present, PUSDIKLAT's physical and human resources to

provide training for trainers and management training for senior MOH staff and other special courses are extremely limited and sustained, long-term investments in both are urgently needed.

3.14 As a first step, PUSDIKLAT's proposals for its own institutional development and that of its existing and proposed in-service training centers are two-fold: (a) for PUSDIKLAT staff, 10 long-term fellowships (8 masters level in management and planning and 2 doctoral level in research and development and evaluation respectively) and 11 short-term (4 in administration/management and 7 in educational technology or related subject areas), supported by 48 manmonths of technical services in organizational development; and (b) for PUSDIKLAT in-service training centers: (i) experiential, field-based training in community health program development for 84 selected national, regional and provincial trainers, and in community health program management for 16 of these trainers; (ii) 20 masters-level fellowships in public health education; and (iii) 18 manmonths of technical assistance services to assist in (b)(i) and (ii) above. In summary, this component of the project would support the provision of 41 fellowships (636 manmonths); 3 technical assistance consultancies (66 manmonths); and funds for in-country seminars and workshops.

#### In-Service Training Centers

3.15 As noted earlier, 7 of PUSDIKLAT's existing training centers are inadequate not only for present purposes but also for the much larger training load that is in prospect during Repelita IV and beyond. Accordingly, as part of its infrastructure development plans during Repelita IV, the 4 existing national centers in Jakarta, Ciloto, Lemah Abang and Salaman would be rehabilitated and expanded to accommodate up to 150 trainees and 10 full-time faculty; 1 of the 2 existing regional centers, at Murnajati, would be rehabilitated and expanded to accommodate up to 120 trainees and 8 full-time faculty, and a third new regional center would be constructed at Palembang (South Sumatra) with the same capacity; and 2 additional new provincial centers would be constructed at Denpasar (Bali) and Banda Aceh (Aceh) to accommodate up to 80 trainees and 6 full-time faculty. This expansion of existing capacity and additional facilities, together with 4 provincial centers included in a proposed ADB-financed health and population project in South and West Kalimantan, Lampung and East Nusa Tenggara, would more than double the training capacity now available to PUSDIKLAT and, pending completion of the full nationwide system required in the long-term, provide it in provinces/regions of highest priority. Thus, the project would provide funds for physical development (civil works, equipment, furniture, vehicles and books and teaching materials) of the 8 institutions noted above (4 national, 2 regional, and 2 provincial). A list of project institutions is contained at Annex 3, Table 2.

#### IV. PROJECT COSTS AND FINANCING

##### A. Cost Estimate

4.01 The estimated total cost of the project is Rp 72.4 billion or US\$65.9 million equivalent, net of duties and taxes. The foreign exchange component is an estimated US\$22.9 million, or 35% of the total. Detailed costs are presented in Annex 2 and are summarized in Tables IV.1 and IV.2 below.

4.02 The project's base costs refer to April 1985 prices. Construction costs are the product of space standards agreed to during appraisal and unit prices provided by the government for the various types of buildings required, averaging US\$173 equivalent per m<sup>2</sup> and ranging from US\$105 per m<sup>2</sup> for residential accommodation to US\$259 per m<sup>2</sup> for school facilities in the other island province of Irian Jaya. Equipment and furniture costs are based on standard lists provided by the government authorities concerned. Equipment and teaching materials imported under the project would be exempt from duties and taxes and such duties or taxes on building materials have not been identified separately in project costs because they are negligible. Technical assistance costs for consultants include salaries and, where appropriate for foreign consultants, allowances and airfares. Unit costs for fellowships average US\$1,680 per manmonth inclusive of international travel. The project's foreign exchange component of US\$22.9 million has been calculated on the basis of the following estimates: civil works - 20%; standard equipment - 60%; special equipment - 100%; furniture - 10%; vehicles - 85%; foreign consultants and overseas fellowships - 100%; local consultants and in-country training - 0%; and studies - 80%. Physical contingencies represent 13% of civil works and 9% of total base costs. Price contingencies, which equal about 15% of total base cost, were calculated on base costs plus physical contingencies and assume the following expected annual rates of increase:

	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>
	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>
Local	8.0	8.0	8.0	8.0	8.0
Foreign	5.0	7.5	8.0	8.0	8.0

Table IV.1: Summary Project Cost By Component

	(RUPIAH Million)			(US\$ '000)			% Foreign Exchange
	Local	Foreign	Total	Local	Foreign	Total	
<b>A. PRE-SERVICE HEALTH MANPOWER DEVELOPMENT</b>							
<b>1. INSTITUTIONAL STRENGTHENING</b>							
PUSDIKNAKES, JAKARTA	661.0	2,226.1	2,887.2	600.9	2,023.8	2,624.7	77
PROVINCIAL UNITS	135.2	67.7	202.9	122.9	61.5	184.4	33
SELECTED CENTERS	299.5	986.8	1,286.3	272.3	897.1	1,169.4	77
Sub-Total INSTITUTIONAL STRENGTHENING	1,095.7	3,280.6	4,376.4	996.1	2,982.4	3,978.5	75
<b>2. PARA-MEDICAL TRAINING SCHOOLS</b>							
NURSING ACADEMIES (AKPER)	1,943.9	572.7	2,516.5	1,767.1	520.6	2,287.7	23
NURSING SCHOOLS (SPK)	5,449.8	1,903.1	7,352.8	4,954.3	1,730.0	6,684.4	26
ASST. PHARMACIST SCHOOL (SMF)	1,256.4	664.0	1,920.4	1,142.2	603.6	1,745.8	35
MEDICAL ANALYST ACADEMY (AAM)	824.8	448.7	1,273.5	749.8	407.9	1,157.7	35
LAB ASSISTANT SCHOOLS (SMAK)	1,902.3	1,233.3	3,135.6	1,729.4	1,121.2	2,850.6	39
SANITARIAN SCHOOLS (SPPH)	1,223.7	558.6	1,782.2	1,112.4	507.8	1,620.2	31
PHYSIOTHERAPIST ACADEMIES (AKFIS)	786.9	485.3	1,272.1	715.3	441.2	1,156.5	38
DENTAL ASSISTANT SCHOOLS (SPRG)	4,398.4	2,086.7	6,485.1	3,998.6	1,897.0	5,895.6	32
MULTI-STREAM ACADEMIES	9,539.2	4,588.5	14,127.8	8,672.0	4,171.4	12,843.4	32
Sub-Total PARA-MEDICAL TRAINING SCHOOLS	27,325.3	12,540.8	39,866.1	24,841.2	11,400.7	36,241.9	31
<b>3. POLICY STUDIES</b>							
	-	169.1	169.1	-	153.8	153.8	100
Sub-Total PRE-SERVICE HEALTH MANPOWER DEVELOPMENT	28,421.1	15,990.5	44,411.6	25,837.3	14,536.8	40,374.2	36
<b>B. IN-SERVICE HEALTH PERSONNEL DEVELOPMENT</b>							
<b>1. INSTITUTIONAL STRENGTHENING</b>							
PUSDIKLAT, JAKARTA	6.5	1,015.5	1,022.0	5.9	923.2	929.1	77
TRAINING CAPACITY	387.9	913.8	1,301.8	352.7	830.8	1,183.4	70
Sub-Total INSTITUTIONAL STRENGTHENING	394.4	1,929.4	2,323.8	358.6	1,754.0	2,112.5	83
<b>2. IN-SERVICE TRAINING CENTERS</b>							
NATIONAL TRAINING CENTERS	4,893.4	1,597.4	6,490.9	4,448.6	1,452.2	5,900.8	25
REGIONAL TRAINING CENTERS	2,228.9	608.6	2,837.6	2,026.3	553.3	2,579.6	21
PROVINCIAL TRAINING CENTERS	2,013.9	503.5	2,517.4	1,830.8	457.8	2,288.5	20
Sub-Total IN-SERVICE TRAINING CENTERS	9,136.2	2,709.6	11,845.8	8,305.6	2,463.3	10,768.9	23
Sub-Total IN-SERVICE HEALTH PERSONNEL DEVELOPMENT	9,530.6	4,639.0	14,169.6	8,664.2	4,217.3	12,881.5	33
<b>Total BASELINE COSTS</b>							
Physical Contingencies	3,646.2	1,542.0	5,188.1	3,314.7	1,401.8	4,716.5	30
Price Contingencies	5,735.4	2,933.2	8,668.5	5,214.0	2,666.5	7,880.5	34
<b>Total PROJECT COSTS</b>	<b>47,333.2</b>	<b>25,104.6</b>	<b>72,437.8</b>	<b>43,030.2</b>	<b>22,822.4</b>	<b>65,852.6</b>	<b>35</b>

Table IV.2: Summary Project Cost by Expenditure Category

	(RUPIAH Million)			(US\$ '000)			% Foreign Exchange
	Local	Foreign	Total	Local	Foreign	Total	
<b>I. INVESTMENT COSTS</b>							
A. LAND COST	2,032.2	-	2,032.2	1,847.4	-	1,847.4	-
B. CIVIL WORKS	30,993.7	8,400.3	39,394.0	28,176.1	7,636.7	35,812.7	21
C. FURNITURE, EQUIPMENT AND MATERIALS							
FURNITURE	2,731.2	329.0	3,060.3	2,483.0	299.1	2,782.0	11
REGULAR EQUIPMENT	520.0	845.6	1,365.6	472.7	768.8	1,241.5	62
SPECIAL EQUIPMENT	-	4,869.7	4,869.7	-	4,427.0	4,427.0	100
VEHICLES	153.0	940.2	1,093.2	139.1	854.7	993.8	86
MATERIALS/BOOKS	533.8	-	533.8	485.3	-	485.3	-
Sub-Total FURNITURE, EQUIPMENT AND MATERIALS	3,938.1	6,984.5	10,922.5	3,580.1	6,349.5	9,929.6	64
D. TECHNICAL ASSISTANCE AND FELLOWSHIPS							
1. CONSULTANTS							
LOCAL CONSULTANTS	30.0	-	30.0	27.2	-	27.2	-
FOREIGN CONSULTANTS	-	2,203.0	2,203.0	-	2,002.7	2,002.7	100
Sub-Total CONSULTANTS	30.0	2,203.0	2,233.0	27.2	2,002.7	2,030.0	99
2. FELLOWSHIPS							
LONG-TERM FELLOWSHIPS	-	2,344.0	2,344.0	-	2,131.0	2,131.0	100
SHORT TERM FELLOWSHIPS	-	528.5	528.5	-	480.5	480.5	100
Sub-Total FELLOWSHIPS	-	2,872.6	2,872.6	-	2,611.4	2,611.4	100
Sub-Total TECHNICAL ASSISTANCE AND FELLOWSHIPS	30.0	5,075.6	5,105.5	27.2	4,614.2	4,641.4	99
E. STUDIES	-	169.1	169.1	-	153.8	153.8	100
F. GROUP EDUCATIONAL ACTIVITIES (TRAINING)	957.8	-	957.8	870.8	-	870.8	-
Total BASELINE COSTS	37,951.7	20,629.5	58,581.2	34,501.5	18,754.1	53,255.6	35
Physical Contingencies	3,646.2	1,542.0	5,188.1	3,314.7	1,401.8	4,716.5	30
Price Contingencies	5,735.4	2,933.2	8,668.5	5,214.0	2,666.5	7,880.5	34
Total PROJECT COSTS	47,333.2	25,104.6	72,437.8	43,030.2	22,922.4	65,952.6	35



Recurrent Costs

4.03 The annual recurrent costs generated directly by the project would amount to about Rp. 1.5 billion, representing about 1.5% of planned MOH expenditure on manpower development in 1988/89 and less than 1% of total planned MOH expenditure in the same year. These additional costs are mainly for salaries, per diems/stipends, administrative overhead, and building, equipment and vehicle operation and maintenance at new schools and academies and in-service training centers to be established under the project. The recurrent costs generated by remaining project training institutions would be negligible since these institutions are already operating, albeit in inadequate facilities.

B. Financing Plan

4.04 The proposed Bank loan of US\$39 million would finance 60% of total project costs, less the cost of vehicles that would be purchased by the government under reserved procurement (US\$65.9 million minus US\$1.2 million). The loan would cover US\$21.9 million of the foreign exchange cost [the total except for the foreign exchange component of vehicles (US\$1.0 million)], and US\$17.1 million or 40% of local costs. Bank financing of 60% of total project costs is consistent with project cost sharing guidelines for the social sectors in Indonesia. The balance of US\$26.9 million equivalent would be made available by the government through its annual development budget. The proposed financing plan is indicated in Table IV.3 below.

Table IV.3: Financing Plan

Project Element	US\$ million equiv.		Total
	GOI	IBRD	
A. Land	2.2	-	2.2
B. Civil Works	17.6	26.8	44.4
C. Furniture, equipment, vehicles and materials	7.1	5.5	12.6
D. Technical Assistance and Fellowships	-	5.5	5.5
E. Studies	-	0.2	0.2
F. Group Educational Activities (Training)	-	1.0	1.0
Totals	26.9	39.0	65.9

C. Procurement

4.05 Project procurement arrangements are summarized in Table IV.4.

Table IV.4: Procurement (in US\$ million) a/

Project Element	Procurement Method				Total Cost
	ICB	LCB	Other <u>b/</u>	N.A.	
A. Land	- (-)	- (-)	2.2 (-)	- (-)	2.2 (-)
B. Civil Works	- (-)	44.4 (26.8)	- (-)	- (-)	44.4 (26.8)
C. Furniture, Equipment, Vehicles and Materials	5.5 (5.5)	5.4 (-)	1.7 (-)	- (-)	12.6 (5.5)
D. Technical Assistance and Fellowships	- (-)	- (-)	5.5 (5.5)	- (-)	5.5 (5.5)
E. Studies	- (-)	- (-)	0.2 (0.2)	- (-)	0.2 (0.2)
F. Group Educational Activities	- (-)	- (-)	1.0 (1.0)	- (-)	1.0 (1.0)
Totals	5.5 (5.5)	49.8 (26.8)	10.6 (6.7)	- (-)	65.9 (39.0)

Note: Figures in parentheses are the respective amounts to be financed by the Bank loan.

a/ Costs include physical and price contingencies.

b/ Other means of procurement include reserved procurement of vehicles, prudent shopping for basic equipment and teaching materials, procurement of consultancies and fellowships, and training overheads.

4.06 Contracts for the construction of the 32 schools and academies and 8 in-service training centers totalling US\$44.4 million would be too small (averaging US\$1.1 million equivalent each) and geographically dispersed (in 18 different provinces) to attract foreign bidders and would

therefore be awarded on the basis of local competitive bidding (LCB) procedures, which are acceptable to the Bank. Designs and tender documents would be prepared by local private consultants on the basis of agreed standards and schedules of accommodation. Site supervision would be carried out by local consultants and field staff of the Ministry of Public Works in accordance with local government practice. Contracts are expected to be procured in three phases over 3½-4 years, with over half scheduled during the first phase (1985/86). In this connection, of the total 40 sites needed, 25 have already been acquired or are available. During negotiations, assurances were obtained that sites for 8 facilities to be constructed commencing 1986/87 would be acquired or made available not later than April 1, 1986, and sites for the remaining 7 facilities, to be constructed commencing 1987/88, would be acquired not later than April 1, 1987.

4.07 About US\$5.4 million equivalent or about one-half of total equipment and furniture required for the project consists of basic furniture, office equipment, and teaching supplies that are manufactured locally at competitive prices in Indonesia. These items would be procured following local competitive bidding procedures under which both local and foreign suppliers represented in Indonesia would be eligible to bid. Specialized equipment and teaching materials, valued at about US\$5.5 million equivalent, would be grouped to the extent practicable and bid packages estimated to cost US\$100,000 equivalent or more would be awarded on the basis of international competitive bidding in accordance with Bank guidelines. Local suppliers would be eligible to bid and, in the evaluation of bids, would be eligible for a margin of preference equal to 15% of the cif costs of competing imports, or the prevailing custom duty, whichever is lower. Equipment items which cannot be grouped into bid packages of US\$100,000 or more and miscellaneous items in packages not exceeding US\$50,000 equivalent, and subject to an aggregate total of US\$0.5 million equivalent, may be procured through prudent shopping. The US\$0.5 million limit was established on the basis of experience with previous Bank loans in Indonesia. Since government policy requires the purchase of locally assembled vehicles, project vehicles valued at about US\$1.2 million would be regarded as reserved procurement.

4.08 Prior Bank review would be required for all contracts to be awarded under international competitive bidding, all civil works contracts of US\$500,000 equivalent or more, and all remaining contracts of US\$100,000 equivalent or more. Sample post-award reviews of contracts less than US\$100,000 equivalent would be carried out during project supervision missions.

4.09 Selection of technical assistance consultants would be carried out in accordance with Bank guidelines. For overseas training, the MOH is expected to request the World Health Organization (WHO) office in Jakarta to assist as executing agency for selection and placement of candidates for all overseas fellowships. The completion of arrangements for the administration and management of overseas fellowships through WHO, or other appropriate intermediary, would be a condition of effectiveness of the proposed loan.

D. Disbursements

4.10 The proposed loan of US\$39 million equivalent would be disbursed as follows: (a) 60% of total expenditures on civil works; (b) 100% of the cif costs of directly imported equipment and training materials or 90% of the ex-factory costs of locally manufactured equipment or 65% of local expenditures for other items procured locally; and (c) 100% of total costs of consultants' services, overseas fellowships, studies and group educational activities. To the extent practicable, withdrawal applications would be aggregated in an amount of US\$100,000 equivalent or more prior to submission to the Bank for reimbursement out of loan proceeds. Disbursements for civil works would be against individual contracts for each physical facility. For group educational activities, disbursements would be against statements of expenditures based on agreed unit costs and verified by the project executing agencies. Supporting documentation would be retained by these agencies and made available for review as requested by Bank supervision missions. Disbursements would be completed by September 30, 1989, about 6 months after the estimated date of project completion. The schedule of estimated disbursements is provided below in Table IV.5.

Table IV.5: Schedule of Disbursements

IBRD Fiscal Year and Semester	Semester US\$ Millions	Cumulative	Percentage Disbursed	
			Estimate For This Project	All PHN Projects
<u>1986</u>				
1st	1.5	1.5	4.0	1.0
2nd	5.5	7.0	18.0	4.0
<u>1987</u>				
1st	8.2	15.2	39.0	7.0
2nd	5.1	20.3	52.0	12.0
<u>1988</u>				
1st	7.0	27.3	70.0	17.0
2nd	3.5	30.8	79.0	29.0
<u>1989</u>				
1st	5.1	35.9	92.0	31.0
2nd	0.8	36.7	94.0	39.0
<u>1990</u>				
1st	2.3	39.0	100.0	48.0

4.11 As Table IV.5 shows, about half the loan is expected to be disbursed by mid-1987, after two full years of project implementation, which is faster than the average for all PHN projects at that stage. This estimate and the expectation of full disbursement 4½ years after loan effectiveness reflects the advanced status of preparation of the civil works component. Site surveys, standardized designs and draft tender documents are already under preparation for 25 of the 40 facilities to be constructed under the project (para. 5.06) and contracts for most of these facilities are planned to be awarded shortly after loan effectiveness. In addition, the existing PHN disbursement profile used here for comparison purposes is heavily weighted by slow implementation and disbursements in early PHN projects in several regions and countries. In light of Indonesia's relatively long experience with Bank PHN projects (para. 2.28) and consequent familiarity with Bank procedures, there is good reason to expect that disbursements will proceed on the schedule estimated above.

#### E. Accounts and Audit

4.12 The two project executing agencies (PUSDIKNAKES and PUSDIKLAT) would establish and maintain separate accounts for all project expenditures, in accordance with sound accounting practices. Project accounts including statements of expenses, would be audited annually by auditors satisfactory to the Bank and annual audit reports would be submitted to the Bank within nine months of the end of the government's fiscal year. Six months after the closing date, the project director would submit a project completion report (PCR) to the Bank. During negotiations, assurances were obtained that the government would comply with these accounting, auditing and reporting requirements.

### V. PROJECT ORGANIZATION, MANAGEMENT AND IMPLEMENTATION

#### A. Project Organization and Management

5.01 Corresponding to the two operational objectives of the project, the main responsibility for project management and implementation would rest with the two MOH centers concerned: PUSDIKNAKES and PUSKIDLAT. Both centers are directly responsible to the Minister of Health, through the Secretary General, under Decree No. 15/1984 dated March 6, 1984 (Chart 1); and the Chiefs of the two centers would be responsible for coordinating the parts of the project within their jurisdiction, including the procurement of civil works, equipment, administration of technical assistance and training, project finances (including counterpart funding and loan disbursements) and overall project progress reports.

5.02 The project would be directed by the Secretary General, assisted by the two Center Chiefs, as Project Officers. To ensure appropriate intra- and inter-ministerial coordination, the Project Director, the two

Project Officers, the MOH Adviser, Health Technology & Manpower, the Chief, MOH Bureau of Planning, the MOH Inspector General, the Chief, Health & Nutrition Bureau, BAPPENAS, and representatives of the Ministries of Finance and Public Works would together constitute a Project Advisory Board, which would meet at least quarterly to review overall project progress, approve plans and budgets for all project components, and resolve any issues affecting project goals and implementation.

5.03 At the central level, the two Project Officers would be assisted by two teams of full and part-time staff of their own Centers, supplemented by full-time technical staff on deputation, including a finance officer, an equipment specialist, a construction adviser, and an architect or engineer (on deputation from MOH's INSTALMED). These teams would be responsible for coordinating the preparation of standardized designs by local architectural consultants and the procurement of furniture and equipment. They would also consolidate project progress reports and monitor and supervise province-level activities, the preparation of annual work programs and budgets, the procurement of goods, and the processing of loan withdrawal applications. At the province level, the provincial health officer or Kanwil would formally be Project Officer and thus be responsible for all project activities in the province concerned. Each provincial Project Officer would appoint a full-time project implementation officer who would be provided with support staff for local procurement, preparation of work programs and budgets, and project monitoring and supervision. During negotiations, the government confirmed that these central- and provincial-level project implementation officers have been appointed. Since the number of project facilities to be developed in any one province does not exceed 4 (and in 13 provinces is only 1 or 2), these project coordination and management arrangements are considered satisfactory. Moreover, they are consistent with existing MOH policies and procedures for development projects of this kind.

5.04 Although it is the government's practice in Bank-financed projects to have project funds administered and controlled by the central ministry concerned in Jakarta, this arrangement would not be suitable in a project of this kind, involving a large number of provincial authorities. Accordingly, it has been agreed that individual project counterpart budgets would be allocated and released directly to each of the province Project Officers concerned.

#### B. Project Implementation

5.05 Civil Works. Project civil works consists of 7 multi-stream paramedical academies, 25 paramedical schools and academies, and 4 national, 2 regional, and 2 provincial in-service training centers. The locations of these facilities are shown in the attached map No. IBRD 18796. Standard designs would be prepared by local architectural consultants at the central level, according to space and design standards which have been agreed by the Bank. Consultants in each province would adapt these

standard designs to individual sites and local planning conditions. The provincial Project Officers would be responsible for initiating construction in accordance with normal government procedures and for appointing consultants to supervise construction and advise on technical matters. Additional technical advice and limited supervision would be provided by the local Public Works Departments, whose representative would be a member of the tender and implementation committees required under government regulations. Contracts for construction would be awarded through provincial tender committees convened by the provincial Project Officer, in accordance with standard government procedures.

5.06 As noted in paras. 4.06 and 4.11 above, sites have already been acquired or are available for the 25 project institutions to be constructed or rehabilitated during the first year (1985/86) of implementation; and, site surveys, standardized designs and draft tender documents are currently being prepared under pre-financing available from the Technical Assistance Credit (898-IND). Completion of these site surveys, designs and draft tender documents would be a condition of effectiveness of the proposed loan.

5.07 Equipment, Furniture, Vehicles and Other Services. Procurement of equipment and vehicles would be managed centrally by the central project implementation teams concerned and of furniture locally by the province-level project implementation officers concerned. As noted in para. 4.09 above, overseas fellowships are expected to be administered by the MOH centrally, with the assistance of WHO as executing agency. The WHO has confirmed its ability and willingness to act in this capacity.

5.08 The project would be implemented over a four-year period (Annex 3, Table 2), plus six months for the completion of payments and full withdrawal of loan proceeds. The project is thus expected to be completed by March 31, 1989, with a Closing Date of September 30, 1989.

## VI. PROJECT BENEFITS AND RISKS

### A. Project Benefits

6.01 The principal direct benefits of the project would be broadly threefold. First, the quality of education and training conducted in 32 (19 existing and 13 new) paramedical academies and schools, about 15% of the MOH's paramedical manpower training infrastructure in 1988/89, would be significantly enhanced through the provision of new and/or improved physical facilities, including appropriate equipment, teaching materials and vehicles for field practice. Second, the provision of new and/or improved physical facilities for 8 MOH in-service training centers would expand the capacity and improve the quality of its in-service education and training system, which is still at an early stage of development. Third, the managerial, supervisory and technical support capability of the MOH's two new national centers responsible for pre-service and in-service training (PUSDIKNAKES and PUSDIKLAT respectively) would be strengthened through

a combination of overseas training and local and foreign technical assistance. In addition to these direct quantitative, qualitative and institution-building benefits, the three studies to be undertaken under the project would provide the MOH, and indirectly BAPPENAS, a sound basis for the formulation of paramedical manpower development plans and policies for Repelita V (1989-94) and beyond.

### B. Project Risks

6.02 The project would be the third Bank-financed operation to be implemented by the MOH but only the first to be undertaken by the two new executing agencies concerned. There is therefore a prima facie risk of delay in implementation. However, as far as the physical infrastructure elements are concerned, sites have been acquired or are already available for over half the project institutions, and standardized designs and draft tender documents are currently being prepared for the 25 project institutions to be developed during the first year (1985/86). Second, the technical assistance inputs for institutional strengthening of PUSDIKNAKES and PUSDIKLAT, and indirectly project management, would help overcome potential problems arising from these agencies' relative inexperience in executing externally-aided projects of this magnitude. Third, an initial project implementation or "launch" workshop is planned for mid-1985, and during the first year or so of implementation, an above-average Bank project supervision effort is anticipated. In the circumstances, the degree of risk is acceptable.

## VII. AGREEMENTS REACHED AND RECOMMENDATION

7.01 At loan negotiations, assurances were obtained that:

- (a) the Borrower would establish by March 31, 1986 and maintain thereafter province-level education and training divisions within its MOH provincial offices (kanwils) in East, West and Central Java and North Sumatra and South Sulawesi (para. 3.05);
- (b) the Borrower would designate 10 paramedical schools/academies as selected centers not later than December 31, 1985 (para. 3.06);
- (c) the Borrower would: (i) develop multistream curricula for selected paramedical manpower categories; (ii) introduce multistream classes and programs, initially on a pilot basis, in the seven project multi-stream academies; and (iii) based on this experience, establish a policy for multistream paramedical manpower education and training not later than April 1, 1988 (para. 3.10);



- (d) the Borrower would establish systematic, cost-effective space allocation and design standards for MOH paramedical academies, schools and in-service training centers, not later than June 30, 1986 (para. 3.10);
- (e) the Borrower would assess the financial resources required and available to achieve the long-term health manpower development plan's targets through the year 2000 under terms of reference acceptable to the Bank, not later than June 30, 1986 (para. 3.11);
- (f) the Borrower would: (i) review the functions, status, and longer-term role of auxiliary health workers (pekarya kesehatan), not later than December 31, 1986; and (ii) define a plan for their longer-term utilization, career development and training before April 1, 1988 (para. 3.11);
- (g) the Borrower would: (i) evaluate the impact of parallel classes not later than December 31, 1986; and (ii) define a plan or policy for their continuation or otherwise before April 1, 1988 taking into account the results of this evaluation (para. 3.11); and
- (h) the Borrower would acquire the sites for the 15 project institutions to be constructed during the second and third years of project implementation (1986/87 and 1987/88) not later than April 1, 1986 and April 1, 1987 respectively (para. 4.06).

7.02 The following would be conditions of loan effectiveness:

- (a) the completion of satisfactory arrangements for the administration and management of overseas fellowships through WHO, or other appropriate intermediary (para. 4.09); and
- (b) the completion of site surveys, standardized designs and draft tender documents for the project institutions to be constructed and/or rehabilitated during the first year (1985/86) of project implementation (para. 5.06).

7.03 Subject to the above conditions and assurances, the project herein proposed would constitute a suitable basis for a Bank loan of US\$39 million equivalent to the Government of Indonesia at the standard variable rate, for a term of 20 years including a five-year grace period.

INDONESIA

SECOND HEALTH (MANPOWER DEVELOPMENT) PROJECT

Existing and Planned MOH Manpower, by Category

	<u>1983/84</u>	<u>1988/89</u>
<b>A. <u>Graduate Level</u></b>		
Specialist physicians	2,733	3,424
General physicians	7,529	13,614
Dentists	1,292	1,773
Other graduate level	1,219	5,283
Sub-total	<u>12,713</u>	<u>24,094</u>
<b>B. <u>Paramedicals</u></b>		
Nurses	44,651	76,238
Sanitarians	6,813	15,333
Dental assistants	446	4,043
Lab. technicians	1,209	4,572
Assistant nutritionists	1,081	6,098
Assistant pharmacists	1,886	5,539
Assistant physiotherapists	221	916
Assistant anaesthetists	124	851
Electro-medical technicians	42	260
Assistant radiographers	189	843
Sub-total	<u>56,662</u>	<u>114,693</u>
<b>C. Auxiliary health workers/ pekerja kesehatan</b>	29,473	50,467
<b>D. Non-medical/administrative level</b>	63,221	94,643
<b>Total</b>	<u>162,129</u>	<u>283,897</u>

Existing and Planned MOH Manpower, by Program Area

<u>Program Area</u>	<u>Graduate Level</u>		<u>Paramedicals</u>		<u>Non-medical</u>		<u>TOTAL</u>	
	<u>1983/84</u>	<u>1988/89</u>	<u>1983/84</u>	<u>1988/89</u>	<u>1983/84</u>	<u>1988/89</u>	<u>1983/84</u>	<u>1988/89</u>
Community Health Centers	3,858	9,256	40,444 <sup>1/</sup>	78,813 <sup>2/</sup>	10,503	19,360	54,805	107,429
Hospitals & Laboratories	6,732	7,021	34,401 <sup>2/</sup>	64,795 <sup>2/</sup>	33,240	35,368	74,373	107,184
Environmental Health	64	348	4,387	3,779	657	2,123	5,108	6,250
Comm. Disease Prevention & Control	782	1,230	3,228	5,982	2,512	9,667	6,522	16,879
Education and Training	197	1,769	1,411	3,759	3,679	3,976	5,287	9,504
Drug & Food Policy & Management	480	802	898	1,824	1,982	2,215	3,360	4,841
Nutrition Improvement	81	142	654	1,543	1,672	3,102	2,407	4,787
Other Programs <sup>3/</sup>	579	3,526	712	4,665	8,976	18,832	10,267	27,023
<b>TOTAL</b>	<b><u>12,773</u></b>	<b><u>24,094</u></b>	<b><u>86,135</u></b>	<b><u>165,160</u></b>	<b><u>63,221</u></b>	<b><u>94,643</u></b>	<b><u>162,129</u></b>	<b><u>283,897</u></b>

Notes: <sup>1/</sup> Community Health Centers: includes 11,130 nurses and 29,313 nurse auxiliaries in 1983/84; and 39,548 nurses, 14,704 technical paramedicals, and 24,557 nurse auxiliaries in 1988/89.

<sup>2/</sup> Hospitals & Laboratories: includes 31,680 nurses and 2,721 technical paramedicals in 1983/84; and 32,741 nurses, 6,672 technical paramedicals and 25,382 nurse auxiliaries in 1988/89.

<sup>3/</sup> Includes: Management & Organization, Health Education, Research & Development; and, Occupational Health, Personnel Administration, and Health Data/Information.

Distribution of Paramedical Training Institutions (Public and Private), by Province

	<u>Nursing Schools</u>	<u>Asst. Pharm. Schools</u>	<u>Lab. Technic. Schools</u>	<u>Sanit. Schools</u>	<u>Dental Asst. Schools</u>	<u>Asst. Nutr. Schools</u>	<u>Teacher Training Schools</u>	<u>Other Schools</u>	<u>Nursing Academies</u>	<u>Other Academies</u>	<u>Total</u>
DKI Jakarta	19	7	3	-	2	1	1	1	5	6	46
West Java	25	4	1	2	1	2	1	-	2	-	38
Central Java	18	4	4	1	-	-	-	-	3	2	32
DI Jogjakarta	4	1	1	-	1	-	-	1	1	1	10
East Java	22	4	2	2	1	-	1	-	1	3	36
Bali	3	1	-	1	1	-	-	-	-	-	6
North Sulawesi	5	-	-	1	1	-	-	-	1	-	8
South Sulawesi	7	2	1	1	1	1	1	-	1	1	16
North Sumatra	16	4	-	-	1	-	-	-	1	-	21
West Sumatra	5	2	2	1	-	1	-	-	-	2	14
South Sumatra	6	2	-	-	1	1	-	-	1	-	11
DI Aceh	5	1	1	1	-	-	-	-	-	-	8
Lampung	2	-	-	1	-	-	-	-	-	-	3
West Nusa Tenggara	2	-	-	-	-	-	-	-	-	-	2
East Nusa Tenggara	3	-	-	-	-	-	-	-	-	-	3
West Kalimantan	2	-	-	-	-	-	-	-	-	-	2
Central Kalimantan	1	-	1	-	-	-	-	-	-	-	2
South Kalimantan	3	1	-	1	1	-	-	-	-	1	7
East Kalimantan	3	-	-	1	-	-	-	-	-	-	4
Riau	2	1	-	-	-	-	-	-	-	-	3
Jambi	1	1	-	1	1	-	-	-	-	-	4
Bengkulu	1	-	-	-	-	-	-	-	-	-	1
Central Sulawesi	2	-	-	-	-	-	-	-	-	-	2
South-East Sulawesi	1	-	-	1	-	-	-	-	-	-	2
Maluku	3	-	-	-	-	-	-	-	-	-	3
Irian Jaya	4	-	-	1	-	-	-	-	-	-	5
East Timor	1	-	-	-	-	-	-	-	-	-	1
<b>Total</b>	<b>166</b>	<b>35</b>	<b>16</b>	<b>16</b>	<b>12</b>	<b>6</b>	<b>4</b>	<b>2</b>	<b>17</b>	<b>16</b>	<b>290</b>
of which:											
MOH (Central/Province)	87	7	9	16	11	5	4	2	8	16	165
Armed Forces	20	1	1	-	1	-	-	-	-	-	23
Private Sector	59	27	6	-	-	1	-	-	9	-	102

INDONESIA  
SECOND HEALTH (MANPOWER DEVELOPMENT) PROJECT  
Summary Account by Project Component  
(RUPIAH Million)

PRE-SERVICE HEALTH MANPOWER DEVELOPMENT

PARA-MEDICAL TRAINING SCHOOLS

IN-SERVICE HEALTH PERSONNEL DEVELOPMENT

INSTITUTIONAL STRENGTHENING	PARA-MEDICAL TRAINING SCHOOLS										IN-SERVICE HEALTH PERSONNEL DEVELOPMENT					Physical Contingencies								
	INSTITUTIONAL STRENGTHENING			NURSING		ASST. PHARMACIST		LAB		DENTAL			INSTITUTIONAL STRENGTHENING		IN-SERVICE TRAINING CENTERS									
	JAKARTA	PROVINCIAL UNITS	SELECTED CENTERS	ACADEMIES (ACPER)	SCHOOLS (SPK)	ACADEMIES (ASPER)	SCHOOLS (SPK)	ACADEMY (AMR)	SCHOOLS (SPMR)	SANITARIAN SCHOOLS (SPPN)	PHYSIOTHERAPIST SCHOOLS (APPT)	ACADEMIES (APMS)	SCHOOLS (SPMS)	ACADEMIES	POLICY STUDIES			PURBILAYA, JAKARTA	TRAINING CAPACITY	NATIONAL TRAINING CENTERS	REGIONAL TRAINING CENTERS	PROVINCIAL TRAINING CENTERS	Total	2
-	-	-	312.0	104.0	104.0	130.0	224.0	104.0	-	200.0	-	-	-	-	-	-	41.6	320.4	440.0	2,032.2	10.0	203.2		
630.3	-	-	1,050.0	4,057.4	1,207.0	794.2	1,053.0	1,239.4	933.4	4,004.7	10,010.1	-	-	-	-	-	3,070.9	2,212.2	1,013.6	29,374.0	9.0	3,076.4		
<b>FURNITURE, EQUIPMENT AND MATERIALS</b>																								
FURNITURE	-	-	132.1	440.9	104.9	32.4	157.3	110.5	-	87.0	300.7	890.4	-	-	-	-	441.5	136.3	90.2	3,040.3	10.0	204.0		
REGULAR EQUIPMENT	-	-	49.9	237.1	54.6	27.3	81.9	42.2	-	45.9	190.0	445.4	-	-	-	-	70.7	21.9	21.9	1,365.6	10.0	134.4		
SPECIAL EQUIPMENT	-	-	90.2	313.7	115.7	242.4	727.2	214.2	-	236.0	823.1	1,070.9	-	-	-	-	135.3	36.1	36.1	4,069.7	10.0	407.0		
VEHICLES	-	-	33.4	117.0	33.4	16.7	50.1	33.4	-	33.4	117.0	204.2	-	-	-	-	222.9	04.7	64.9	1,093.2	10.0	109.3		
MATERIALS/BOOKS	-	-	20.0	72.0	20.0	10.4	31.2	10.4	-	15.6	72.0	176.0	-	-	6.5	-	34.1	20.0	20.0	533.0	9.9	52.7		
Sub-Total FURNITURE, EQUIPMENT AND MATERIALS	-	-	346.5	1,191.4	529.4	349.3	1,047.0	430.0	410.7	1,592.4	3,513.4	-	-	6.5	-	-	932.4	299.0	235.0	10,722.5	10.0	1,071.6		
<b>D. TECHNICAL ASSISTANCE AND FELLOWSHIPS</b>																								
<b>1. CONSULTANTS</b>																								
LOCAL CONSULTANTS	30.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30.0	0.0	0.0	
FOREIGN CONSULTANTS	1,581.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	451.9	149.3	-	-	2,203.0	0.0	0.0	
Sub-Total CONSULTANTS	1,611.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	451.9	149.3	-	-	2,233.0	0.0	0.0	
<b>2. FELLOWSHIPS</b>																								
LONG-TERM FELLOWSHIPS	221.4	-	976.7	-	-	-	-	-	-	-	-	-	-	-	-	-	407.0	730.7	-	-	2,344.0	0.0	0.0	
SHORT TERM FELLOWSHIPS	200.5	47.7	10.1	-	-	-	-	-	-	-	-	-	-	-	-	-	150.6	5.6	-	-	520.5	0.0	0.0	
Sub-Total FELLOWSHIPS	510.1	47.7	986.8	-	-	-	-	-	-	-	-	-	-	-	-	-	543.6	744.4	-	-	2,872.6	0.0	0.0	
Sub-Total TECHNICAL ASSISTANCE AND FELLOWSHIPS	2,121.7	47.7	986.8	-	-	-	-	-	-	-	-	-	-	-	-	-	1,015.5	913.0	-	-	5,105.5	0.0	0.0	
<b>E. STUDIES</b>																								
F. GROUP EDUCATIONAL ACTIVITIES (TRAINING)	135.2	135.2	299.5	-	-	-	-	-	-	-	-	-	-	149.1	-	-	-	-	-	-	149.1	10.0	16.7	
Total INVESTMENT COSTS	2,007.2	292.9	1,204.3	2,516.5	7,352.0	1,920.4	1,273.5	3,135.6	1,702.2	1,272.1	6,405.1	14,127.0	169.1	1,022.0	1,301.0	6,490.9	2,837.4	2,517.4	50,501.2	0.9	5,100.1			
Total BASELINE COSTS	2,007.2	292.9	1,204.3	2,516.5	7,352.0	1,920.4	1,273.5	3,135.6	1,702.2	1,272.1	6,405.1	14,127.0	169.1	1,022.0	1,301.0	6,490.9	2,837.4	2,517.4	50,501.2	0.9	5,100.1			
Physical Contingencies	-	-	-	291.7	735.3	192.0	127.3	313.6	170.2	127.2	440.5	1,012.0	14.9	-	-	449.1	203.0	251.7	5,100.1	0.0	0.0			
Price Contingencies	456.0	39.7	251.4	542.0	1,110.0	201.6	248.3	500.9	423.9	140.4	742.0	1,552.6	23.2	192.3	249.4	709.9	400.1	467.2	8,448.5	7.0	670.1			
Total PROJECT COSTS	3,344.0	242.6	1,537.7	3,330.2	9,206.9	2,314.0	1,649.1	4,030.1	2,304.3	1,539.0	8,075.6	17,093.2	209.3	1,214.3	1,571.1	7,049.0	3,529.4	3,236.3	72,437.0	0.1	5,046.2			
Foreign Exchange	2,570.0	79.1	1,170.2	752.0	2,342.3	010.4	570.1	1,500.3	740.9	501.3	2,577.5	5,401.0	209.3	1,207.3	1,120.5	1,097.2	744.1	643.2	25,104.6	6.9	1,722.5			

I. INVESTMENT COSTS

A. LAND COST

B. CIVIL WORKS

C. FURNITURE, EQUIPMENT AND MATERIALS

- FURNITURE
- REGULAR EQUIPMENT
- SPECIAL EQUIPMENT
- VEHICLES
- MATERIALS/BOOKS

Sub-Total FURNITURE, EQUIPMENT AND MATERIALS

D. TECHNICAL ASSISTANCE AND FELLOWSHIPS

1. CONSULTANTS

- LOCAL CONSULTANTS
- FOREIGN CONSULTANTS

Sub-Total CONSULTANTS

2. FELLOWSHIPS

- LONG-TERM FELLOWSHIPS
- SHORT TERM FELLOWSHIPS

Sub-Total FELLOWSHIPS

Sub-Total TECHNICAL ASSISTANCE AND FELLOWSHIPS

E. STUDIES

F. GROUP EDUCATIONAL ACTIVITIES (TRAINING)

Total INVESTMENT COSTS

Total BASELINE COSTS

Physical Contingencies

Price Contingencies

Total PROJECT COSTS

Foreign Exchange

INDONESIA  
SECOND HEALTH (MANPOWER DEVELOPMENT) PROJECT  
Table 101. INSTITUTION STRENGTHENING: CENTER FOR EDUCATION OF HEALTH MANPOWER (PUSDIKMAKES), JAKARTA  
Detailed Cost Table  
(RUPIAH Million)

	Unit	Quantity					Unit Cost	Base Costs					Totals Including Contingencies					Totals Including Contingencies (US\$ '000)				
		85/86	86/87	87/88	88/89	Total		85/86	86/87	87/88	88/89	Total	85/86	86/87	87/88	88/89	Total	85/86	86/87	87/88	88/89	Total
<b>I. INVESTMENT COSTS</b>																						
<b>A. CIVIL WORKS /a</b>																						
		-	-	-	-	-	252.1	252.1	94.5	31.5	430.3	269.5	290.3	117.5	42.3	719.7	245.0	263.9	106.9	38.5	654.3	
<b>B. TECHNICAL ASSISTANCE AND FELLOWSHIPS</b>																						
<b>1. CONSULTANTS</b>																						
LOCAL CONSULTANTS /b	MANMONTH	4.8	9.6	9.6	-	24	1,248	6.0	12.0	12.0	-	30.0	6.4	13.9	15.0	-	35.3	5.9	12.6	13.6	-	32.1
FOREIGN CONSULTANTS /c	MANMONTH	33.6	67.2	50.4	16.8	168	9,415	316.3	632.7	474.5	158.2	1,581.7	332.1	708.3	572.8	206.2	1,819.4	301.9	644.0	520.7	187.5	1,654.0
Sub-Total CONSULTANTS								322.3	644.6	486.5	158.2	1,611.6	338.5	722.2	587.8	206.2	1,854.8	307.7	656.6	534.4	187.5	1,686.2
<b>2. FELLOWSHIPS</b>																						
LONG-TERM FELLOWSHIPS /d	FELLOWSHIP	-	2	3	1	6	36,937	-	73.9	110.8	36.9	221.6	-	82.7	133.8	48.2	264.6	-	75.2	121.6	43.8	240.6
SHORT-TERM FELLOWSHIPS I /e	FELLOWSHIP	4	4	5	4	17	11,613	46.5	46.5	58.1	46.5	197.4	48.8	52.0	70.1	60.6	231.4	44.3	47.3	63.7	55.1	210.4
SHORT-TERM FELLOWSHIPS II /f	FELLOWSHIP	-	4	4	4	12	6,765	-	27.1	27.1	27.1	81.2	-	30.3	32.7	35.3	98.2	-	27.5	29.7	32.1	89.3
SHORT-TERM ENG. LANG. TRAINING /g	FELLOWSHIP	-	-	-	-	-	-	2.5	2.5	2.5	2.5	9.9	2.6	2.8	3.0	3.2	11.5	2.4	2.5	2.7	2.9	10.5
Sub-Total FELLOWSHIPS								48.9	149.9	198.4	112.9	510.1	51.4	167.8	239.5	147.2	605.9	46.7	152.5	217.7	133.8	550.8
<b>3. GROUP EDUCATIONAL ACTIVITIES /h</b>								33.8	33.8	33.8	33.8	135.2	36.3	39.2	42.4	45.7	163.6	33.0	35.7	38.5	41.6	148.8
Sub-Total TECHNICAL ASSISTANCE AND FELLOWSHIPS								405.0	828.3	718.7	304.9	2,256.9	426.2	929.2	869.7	399.2	2,624.3	387.4	844.8	796.6	362.9	2,385.7
Total INVESTMENT COSTS								657.1	1,080.4	813.2	336.4	2,887.2	695.7	1,219.6	987.2	441.5	3,344.0	632.4	1,108.7	897.5	401.4	3,040.0
Total								657.1	1,080.4	813.2	336.4	2,887.2	695.7	1,219.6	987.2	441.5	3,344.0	632.4	1,108.7	897.5	401.4	3,040.0

/a COSTS FOR SUPERVISION AND COORDINATION OF CONSTRUCTION IMPLEMENTATION BY PUSDIKMAKES  
/b 2 CONSULTANTS FOR 12 MTHS EACH  
/c 11 CONSULTANTS: 3 FOR 24 MTHS EACH AND 8 FOR 12 MTHS EACH  
/d 6 FOR MASTER LEVEL (18 MTHS) AT WHO US/UK RATE  
/e 17 FELLOWSHIPS OF 3 MTHS EACH AT WHO EXTRA-REGIONAL RATES  
/f 12 FELLOWSHIPS OF 3 MTHS EACH AT WHO REGIONAL RATES  
/g FOR 35 FELLOWS (IN-COUNTRY)  
/h WORKSHOPS, SEMINARS ETC.

INDONESIA  
 SECOND HEALTH (MANPOWER DEVELOPMENT) PROJECT  
 Table 102. INSTITUTION STRENGTHENING: PROVINCIAL HEALTH EDUC. UNITS  
 Detailed Cost Table  
 (RUPIAH Million)

	Unit	Quantity					Unit Cost	Base Costs					Totals Including Contingencies					Totals Including Contingencies (US\$ '000)				
		85/86	86/87	87/88	88/89	Total		85/86	86/87	87/88	88/89	Total	85/86	86/87	87/88	88/89	Total	85/86	86/87	87/88	88/89	Total
<b>I. INVESTMENT COSTS</b>																						
<b>A. TECHNICAL ASSISTANCE AND FELLOWSHIPS</b>																						
<b>1. FELLOWSHIPS</b>																						
SHORT-TERM FELLOWSHIPS /a	FELLOWSHIP	2	3	3	2	10	6.765	13.5	20.3	20.3	13.5	67.7	14.2	22.7	24.5	17.6	79.1	12.9	20.7	22.3	16.0	71.9
Sub-Total FELLOWSHIPS								13.5	20.3	20.3	13.5	67.7	14.2	22.7	24.5	17.6	79.1	12.9	20.7	22.3	16.0	71.9
Sub-Total TECHNICAL ASSISTANCE AND FELLOWSHIPS								13.5	20.3	20.3	13.5	67.7	14.2	22.7	24.5	17.6	79.1	12.9	20.7	22.3	16.0	71.9
<b>B. GROUP EDUCATIONAL ACTIVITIES /b</b>		-	-	-	-	-		27.0	40.6	40.6	27.0	135.2	29.0	47.1	50.8	36.6	163.5	26.4	42.8	46.2	33.3	148.7
<b>Total INVESTMENT COSTS</b>								40.6	60.9	60.9	40.6	202.9	43.3	69.8	75.3	54.2	242.6	39.3	63.4	68.5	49.3	220.5
<b>Total</b>								40.6	60.9	60.9	40.6	202.9	43.3	69.8	75.3	54.2	242.6	39.3	63.4	68.5	49.3	220.5

/a 10 FELLOWSHIPS OF 3 MTHS EACH AT WHO REGIONAL RATES  
 /b WORKSHOPS, SEMINARS ETC.

INDONESIA  
SECOND HEALTH (HUMANPOWER DEVELOPMENT) PROJECT  
Table 103. INSTITUTION STRENGTHENING: SELECTED CENTERS  
Detailed Cost Table  
(RUPIAH Million)

Unit	Quantity					Unit Cost	Base Costs					Totals Including Contingencies					Totals Including Contingencies (US\$ '000)					
	85/86	86/87	87/88	88/89	Total		85/86	86/87	87/88	88/89	Total	85/86	86/87	87/88	88/89	Total	85/86	86/87	87/88	88/89	Total	
<b>I. INVESTMENT COSTS</b>																						
A. LONG-TERM FELLOWSHIPS I /a	FELLOWSHIP	5	4	6	6	23	22,832	114.2	137.0	137.0	137.0	525.1	119.8	153.4	165.4	178.6	617.2	108.9	139.4	150.3	162.4	561.1
B. LONG TERM FELLOWSHIPS II /b	FELLOWSHIP	-	2	3	2	7	32,844	-	65.7	98.5	65.7	229.9	-	73.5	118.9	85.6	278.1	-	66.9	100.1	77.9	252.9
C. LONG-TERM FELLOWSHIPS III /c	FELLOWSHIP	-	2	2	2	6	36,937	-	73.9	73.9	73.9	221.6	-	82.7	89.2	96.3	268.2	-	75.2	81.1	87.6	243.8
D. SHORT-TERM ENG. LANG. TRAINING /d		-	-	-	-	-		2.0	4.1	3.0	1.0	10.1	2.1	4.5	3.7	1.3	11.7	1.9	4.1	3.3	1.2	10.6
E. GROUP EDUC. ACTIVITIES /e		-	-	-	-	-		74.9	74.9	74.9	74.9	299.5	88.4	86.9	93.8	101.3	362.5	73.1	79.0	85.3	92.1	329.5
<b>Total INVESTMENT COSTS</b>								191.1	335.5	387.3	352.4	1,286.3	202.4	401.1	471.0	463.2	1,537.7	184.0	364.6	428.2	421.1	1,397.9
<b>Total</b>								191.1	335.5	387.3	352.4	1,286.3	202.4	401.1	471.0	463.2	1,537.7	184.0	364.6	428.2	421.1	1,397.9

- /a 23 FELLOWSHIPS FOR 18 MTHS EACH AT WHO REGIONAL RATES  
/b 7 FELLOWSHIPS FOR 18 MTHS EACH AT WHO EXTRA-REGIONAL RATES  
/c 6 FELLOWSHIPS FOR 18 MTHS EACH AT WHO US/UK RATES  
/d 36 FELLOWS (IN-COUNTRY)  
/e WORKSHOPS, SEMINARS ETC.



INDONESIA  
SECOND HEALTH (MANPOWER DEVELOPMENT) PROJECT  
Table 201. INSTITUTION STRENGTHENING: CENTER FOR EDUC. & TRAINING OF HEALTH PERSONNEL (PUSDIKLAT)  
Detailed Cost Table  
(RUPIAH Million)

	Quantity					Unit Cost	Base Costs					Totals Including Contingencies					Totals Including Contingencies (US\$ '000)					
	Unit	85/86	86/87	87/88	88/89		Total	85/86	86/87	87/88	88/89	Total	85/86	86/87	87/88	88/89	Total	85/86	86/87	87/88	88/89	Total
<b>I. INVESTMENT COSTS</b>																						
A. MATERIALS AND BOOKS /a		-	-	-	-	-	6.5	-	-	-	6.5	7.0	-	-	-	7.0	6.3	-	-	-	6.3	
B. FOREIGN CONSULTANTS /b	MAN MTH	12	12	12	12	40	9.415	113.0	113.0	113.0	113.0	451.9	118.6	126.5	136.4	147.3	528.8	107.8	115.0	124.0	133.9	480.7
C. LONG-TERM FELLOWSHIPS I /c	FELLOWSHIP	-	2	3	3	8	36.937	-	73.9	110.8	110.8	295.5	-	82.7	133.8	144.5	361.0	-	75.2	121.6	131.3	328.1
D. LONG-TERM FELLOWSHIPS II /d	FELLOWSHIP	-	-	2	-	2	55.766	-	-	111.5	-	111.5	-	-	134.6	-	134.6	-	-	122.4	-	122.4
E. SHORT-TERM FELLOWSHIPS I /e	FELLOWSHIP	-	2	2	-	4	9.133	-	18.3	18.3	-	36.5	-	20.5	22.1	-	42.5	-	18.6	20.0	-	38.6
F. SHORT-TERM FELLOWSHIPS II /f	FELLOWSHIP	-	3	4	-	7	16.349	-	49.0	65.4	-	114.4	-	54.9	70.9	-	133.9	-	49.9	71.8	-	121.7
G. SHORT-TERM ENG. LANG. TRAINING /g		-	-	-	-	-	-	1.4	1.4	1.4	1.4	5.6	1.5	1.6	1.7	1.8	6.6	1.3	1.4	1.5	1.7	6.0
<b>Total INVESTMENT COSTS</b>								120.9	255.6	420.4	225.2	1,022.0	127.1	286.1	507.5	293.6	1,214.3	115.5	260.1	461.4	266.9	1,103.9
<b>Total</b>								120.9	255.6	420.4	225.2	1,022.0	127.1	286.1	507.5	293.6	1,214.3	115.5	260.1	461.4	266.9	1,103.9

/a FOR CENTRAL TRAINERS

/b 2 FOR 24 MTHS EACH

/c 8 FELLOWSHIPS AT MASTER LEVEL FOR 18 MTHS EACH AT WHO US/UK RATE

/d 2 FELLOWSHIPS AT PH.D. LEVEL AT WHO US/UK RATES

/e 4 FELLOWSHIPS FOR 6 MTHS EA AT WHO REGIONAL RATE

/f 7 FELLOWSHIPS FOR 6 MTHS EA AT WHO EXTRA-REGIONAL RATE

/g FOR 20 FELLOWS (IN-COUNTRY)

INDONESIA  
SECOND HEALTH (MANPOWER DEVELOPMENT) PROJECT  
Table 292. INSTITUTION STRENGTHENING: TRAINING CENTERS  
Detailed Cost Table  
(RUPIAH Million)

	Unit	Quantity					Unit Cost	Base Costs					Totals Including Contingencies					Totals Including Contingencies (US\$ '000)				
		85/86	86/87	87/88	88/89	Total		85/86	86/87	87/88	88/89	Total	85/86	86/87	87/88	88/89	Total	85/86	86/87	87/88	88/89	Total
<b>I. INVESTMENT COSTS</b>																						
A. LONG-TERM FELLOWSHIPS /a	FELLOWSHIP	-	-	10	10	20	36.937	-	-	369.4	369.4	738.7	-	-	445.9	481.6	927.5	-	-	405.4	437.8	843.2
B. SHORT-TERM ENG. LANG. TRAINING /b		-	-	-	-	-		-	1.7	2.0	2.0	5.6	-	1.9	2.4	2.6	6.8	-	1.7	2.2	2.3	6.2
C. FOREIGN CONSULTANT /c	MAN MTH	5.4	12.6	-	-	18	9.415	50.8	118.6	-	-	169.5	53.4	132.8	-	-	186.2	40.5	120.7	-	-	169.3
D. EXP. FIELD BASED TRNG /d		-	-	-	-	-		46.3	46.3	46.3	46.3	185.1	49.7	53.7	58.0	62.6	224.0	45.7	48.8	52.7	56.9	203.7
E. MANAGEMENT TRNG. FOR TRAINERS /e		-	-	-	-	-		101.4	101.4	-	-	202.8	108.9	117.7	-	-	226.6	99.0	187.0	-	-	286.0
<b>Total INVESTMENT COSTS</b>								198.5	248.0	417.6	417.6	1,301.8	212.0	306.1	506.3	546.8	1,571.1	192.7	278.2	440.3	497.1	1,428.3
<b>Total</b>								198.5	248.0	417.6	417.6	1,301.8	212.0	306.1	506.3	546.8	1,571.1	192.7	278.2	440.3	497.1	1,428.3

- /a 20 FELLOWSHIPS AT MASTER LEVEL FOR 18 MTHS EA. AT WHO US/UK RATES  
/b FOR 20 FELLOWS (IN-COUNTRY)  
/c 1 FOR 18 MTHS  
/d GROUP EDUCATIONAL ACTIVITY TO TRAIN CORE OF TRAINERS  
/e GROUP EDUC. ACTIVITY TO TRAIN CORE OF TRAINERS

INDONESIA  
SECOND HEALTH (MANPOWER DEVELOPMENT) PROJECT

Implementation Schedule

Calendar Year	1985	1986	1987	1988	1989	1990	1991
ISRD FY (July-June)	FY86	FY87	FY88	FY89	FY90	FY91	
Govt. FY (April-March)	85/86	86/87	87/88	88/89	89/90	90/91	
A. Health Manpower Development Program Proposed by Govt. for Repelita IV	[Gantt bar from start of 1985 to end of 1989]						
B. Project							
Board presentation	[Gantt bar]						
Loan effectiveness	[Gantt bar]						
Project completion	[Gantt bar from start of 1985 to end of 1989]						
Loan closing	[Gantt bar from start of 1985 to end of 1990]						
C. Civil Works							
Acquisition of addl. sites	[Gantt bar from start of 1985 to end of 1987]						
(1) Batch I institutions /1							
Preparation of documents	[Gantt bar]						
Tendering	[Gantt bar]						
Construction	[Gantt bar]	[Gantt bar]					
Acquisition of furniture, equipment, vehicles and materials		[Gantt bar]	[Gantt bar]				
(2) Batch II institutions /2							
Preparation of documents		[Gantt bar]					
Tendering		[Gantt bar]					
Construction		[Gantt bar]	[Gantt bar]				
Acquisition of furniture, equipment, vehicles and materials			[Gantt bar]	[Gantt bar]			
(3) Batch III institutions /3							
Preparation of documents			[Gantt bar]				
Tendering			[Gantt bar]				
Construction			[Gantt bar]	[Gantt bar]			
Acquisition of furniture, equipment, vehicles and materials				[Gantt bar]	[Gantt bar]		
D. T.A. and Fellowships							
Technical assistance (foreign and local)	[Gantt bar from start of 1985 to end of 1989]						
Short-term fellowships	[Gantt bar from start of 1985 to end of 1989]						
Long-term fellowships		[Gantt bar]	[Gantt bar]	[Gantt bar]			
E. Studies	[Gantt bar from start of 1985 to end of 1988]						
F. Training (group educ. activities)	[Gantt bar from start of 1985 to end of 1989]						

1/ 7 multi-stream academies, 13 schools/academies, 4 national in-service training-centers and 1 provincial training center.

2/ 5 schools/academies and 3 regional/provincial in-service training centers.

3/ 7 schools/academies.

List of Project Institutions

A. Paramedical Schools and Academies (32)

DKI Jakarta (3)

Jakarta	Lab. Assistant School (SMAK)
Jakarta	Dental Nurse School (SPRG)
Jakarta	Multistream Academy (APRO/ATEM/AKPER)

West Java (3)

Sumedang	Nursing School (SPK)
Tasikmalaya	Dental Nurse School (SPRG)
Bandung	Medical Analyst Academy (AAM)

Central Java (3)

Semarang	Dental Nurse School (SPRG)
Solo	Physiotherapist Academy (AKFIS)
Semarang	Multistream Academy (AKPER/APRO)

DI Jakarta (1)

Jogjakarta	Multistream Academy (AKZI/AKPER/APRO)
------------	---------------------------------------

East Java (4)

Madiun	Nursing School (SPK)
Kediri	Nursing School (SPK)
Surabaya	Multistream Academy (AKPER/AKFIS)
Malang	Multistream Academy (AKPER/AKZI)

Bali (1)

Denpasar	Nursing Academy (AKPER)
----------	-------------------------

North Sulawesi (2)

Manado	Pharmacist Assistant School (SMF)
Manado	Dental Nurse School (SPRG)

South Sulawesi (1)

Ujung Pandang	Multistream Academy (AKZI/AKFIS)
---------------	----------------------------------

North Sumatra (1)

Medan	Nursing Academy (AKPER)
-------	-------------------------

West Sumatra (3)

Solok	Nursing School (SPK)
Padang	Multistream Academy (AKPER/AKZI/AKP)
Padang	Nursing School (SPK)

South Sumatra (1)

Palembang	Lab. Assistant School (SMAK)
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<u>DI Aceh (1)</u> Banda Aceh	Sanitarian School (SPPH)
<u>West Nusa Tenggara (1)</u> Mataram	Lab. Assistant School (SMAK)
<u>East Kalimantan (1)</u> Samarinda	Sanitarian School (SPPH)
<u>Riau (1)</u> Tanjung Pinang	Nursing School (SPK)
<u>Jambi (2)</u> Jambi Jambi	Pharmacist Assistant School (SMF) Dental Nurse School (SPRG)
<u>Maluku (2)</u> Ternate Ambon	Nursing School (SPK) Dental Nurse School (SPRG)
<u>Irian Jaya (1)</u> Manokwari	Nursing School (SPK)
<b>B. <u>In-Service Training Centers (8)</u></b>	
<u>DKI Jakarta</u> Cilandak	National
<u>West Java</u> Ciloto Lamah Abang	National National
<u>Central Java</u> Salaman	National
<u>East Java</u> Murnajati	Regional
<u>South Sumatra</u> Palembang	Regional
<u>Bali</u> Denpasar	Provincial
<u>Aceh</u> Banda Aceh	Provincial

INDONESIA  
SECOND HEALTH (MANPOWER DEVELOPMENT) PROJECT  
Technical Assistance and Fellowships

Field	Foreign Specialists		Local Specialists		Fellowships/a				Total Manmonths		
	No.	Manmonths Each	Total Manmonths	No.	Manmonths Each	Total Manmonths	Short-Term	M.A.		Ph.D.	
<u>Center for Educ. of Health Manpower (PUSDIKMAKS), Jakarta</u>											
(a) Management and planning	2	24	48	-	-	-	6	3	-	-	18
(b) Curriculum development	1	24	24	1	12	12	2	3	-	-	6
(c) Technical superv./supp. of educ. programs	4	12	48	-	-	-	13	3	-	-	39
(d) Evaluation and monitoring	2	12	24	1	12	12	4	3	-	-	12
(e) Information system	2	12	24	-	-	-	1	-	18	-	18
							4	3	-	-	12
Sub-Total	11		168	2		24	35				195
<u>Provincial Level Health Educ. Units/b</u>											
(a) Management and planning	-	-	-	-	-	-	5	3	-	-	15
(b) Technical superv./supp. of educ. programs	-	-	-	-	-	-	5	3	-	-	15
Sub-Total	-		-	-		-	10				30
<u>Selected Centers</u>											
(a) Training for nurse trainers	-	-	-	-	-	-	20	-	18	-	360
(b) Training for trainers in other paramedical areas	-	-	-	-	-	-	16	-	18	-	288
Sub-Total	-		-	-		-	36				648
<u>Center for Educ. &amp; Trng. of Health Personnel (PUSDIKLAT), Jakarta</u>											
(a) Manpower, planning, org. development	2	24	48	-	-	-	8	-	18	-	144
(b) Research and development and Evaluation	-	-	-	-	-	-	2	-	-	33	66
(c) Administration	-	-	-	-	-	-	4	6	-	-	24
(d) Technical subject areas	-	-	-	-	-	-	7	6	-	-	42
Sub-Total	2		48	-		-	21				276
<u>In-Service Training Centers</u>											
(a) Public health education	1	18	18	-	-	-	20	-	18	-	360
Sub-Total	1		18	-		-	20				360
TOTAL	14		276	2		24	122				1,509

/a One English language training course in Indonesia will be provided with each long-term fellowship.

/b Please note: Specialists based at center will provide support as needed to provincial units.

INDONESIA

SECOND HEALTH (MANPOWER DEVELOPMENT) PROJECT

Selected Documents and Data Available in Project File

A. Selected Reference Materials Related to the Sector

- A.1 Indonesia: Health Sector Overview. Report No. 2379-IND, February, 1979.
- A.2 Indonesia: Health Sector Update. (White cover draft). September, 1981
- A.3 Indonesia: Health Sector Review. (White cover draft). March, 1983.
- A.4 Indonesia: Public Investment Review - Health Sector (draft). December, 1984.
- A.5 Indonesia: Financial Resources and Human Development in the Eighties. Report No. 3795-IND. May, 1982.
- A.6 Indonesia: Selected Issues in Spatial Development. Report No. 4776-IND. April, 1984.
- A.7 The Health Situation of Indonesia: (Statistical Profile). Compiled by the Bureau of Planning, Department of Health, Indonesia, for the ESCAP Programme on Health and Development: Health Technical Paper No.70/PDH 20, 1984.
- A.8 Government of Indonesia: Fourth Five-Year Development Plan (Repelita IV), Chapters 10, 23 and 25.
- A.9 Health and Population Sector Profile (draft). Asian Development Bank. February, 1983.

B. Selected Reports and Studies Related to the Sector

- B.1 Indonesia: Health Manpower Report (White cover). October, 1982.
- B.2 Repelita IV: Program Pendidikan Dan Latihan Tenaga Kesehatan (1984/1985-1988/1989). (Long-term Health Manpower Development Plan). Department of Health, Indonesia. 1984.

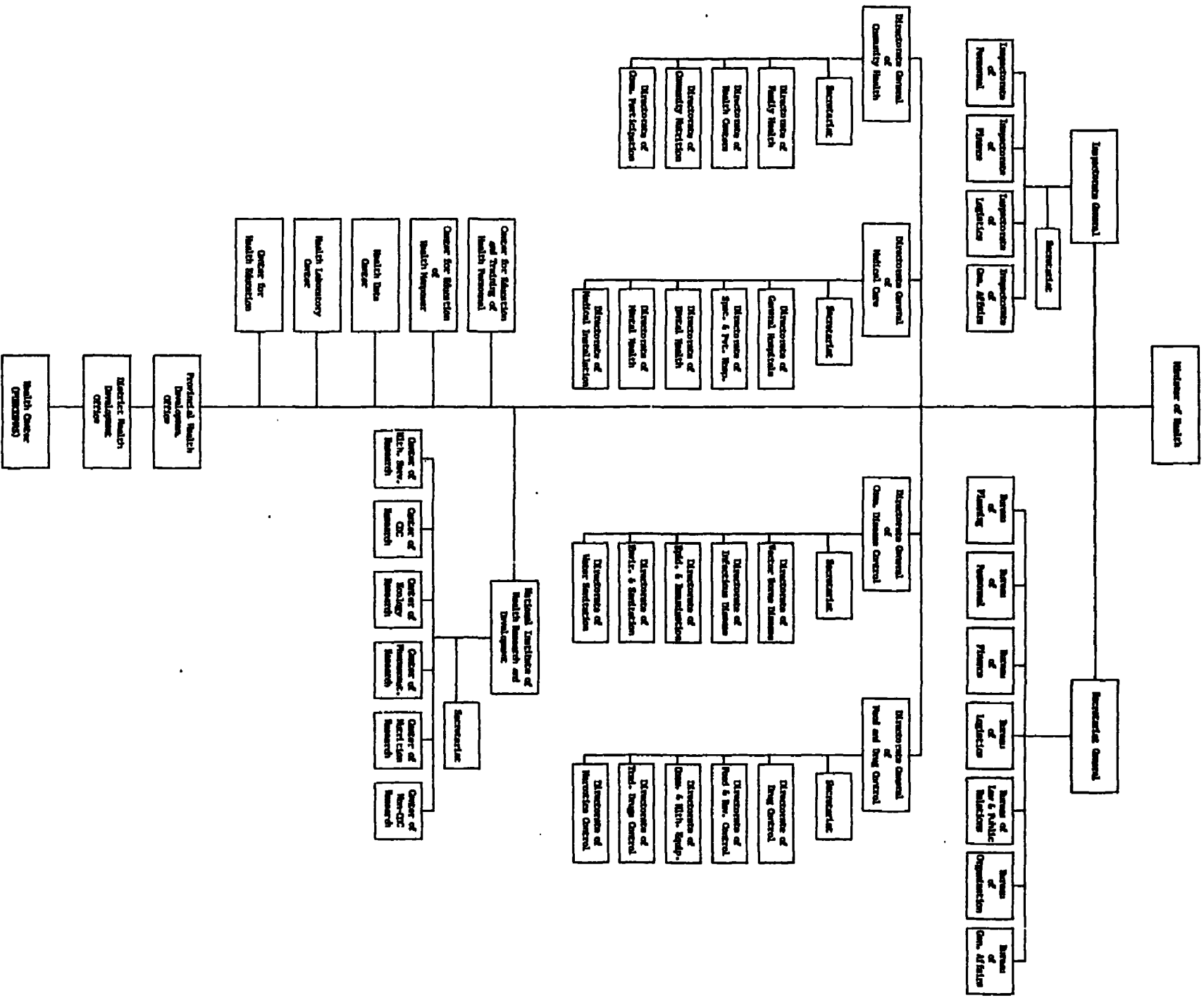
- B.3 Project Proposal for the Second Health (Manpower Development) Project. Center for Education of Health Manpower (PUSDIKNAKES), MOH, Jakarta. October, 1984.
- B.4 Project Proposal for the Second Health (Manpower Development) Project. Center for Education and Training of Health Personnel (PUSDIKLAT), MOH, Jakarta. October, 1984.
- B.5 Rencana Pelaksanaan Latihan Tenaga Kesehatan Repelita IV (Master Training Schedule for Repelita IV). Center for Education and Training of Health Personnel (PUSDIKLAT), MOH. Jakarta, 1984.
- B.6 Laporan: Latihan Pelatih, Pekarya Kesehatan [Pekarya (Nurse Assistant) Training Program], MOH, Jakarta. July, 1984.
- B.7 Project Paper Supplement: Health Training, Research and Development (Project No. 497-0273). United States Agency for International Development, Jakarta. August, 1983.
- B.8 Health and Family Planning Project, Indonesia: Technical Assistance Study. Asian Development Bank. July, 1984.
- C. Working Papers
  - C.1 Architect's Working Papers, Second Health (Manpower Development) Project, Appraisal Mission. October-November, 1984.



ORGANIZATION

STUDY HEALTH SERVICES DELIVERY SERVICES

0-1: The Structure of the Ministry of Health



INDONESIA  
HEALTH (MANPOWER DEVELOPMENT) PROJECT  
C-2: The Center for Education of Health Manpower

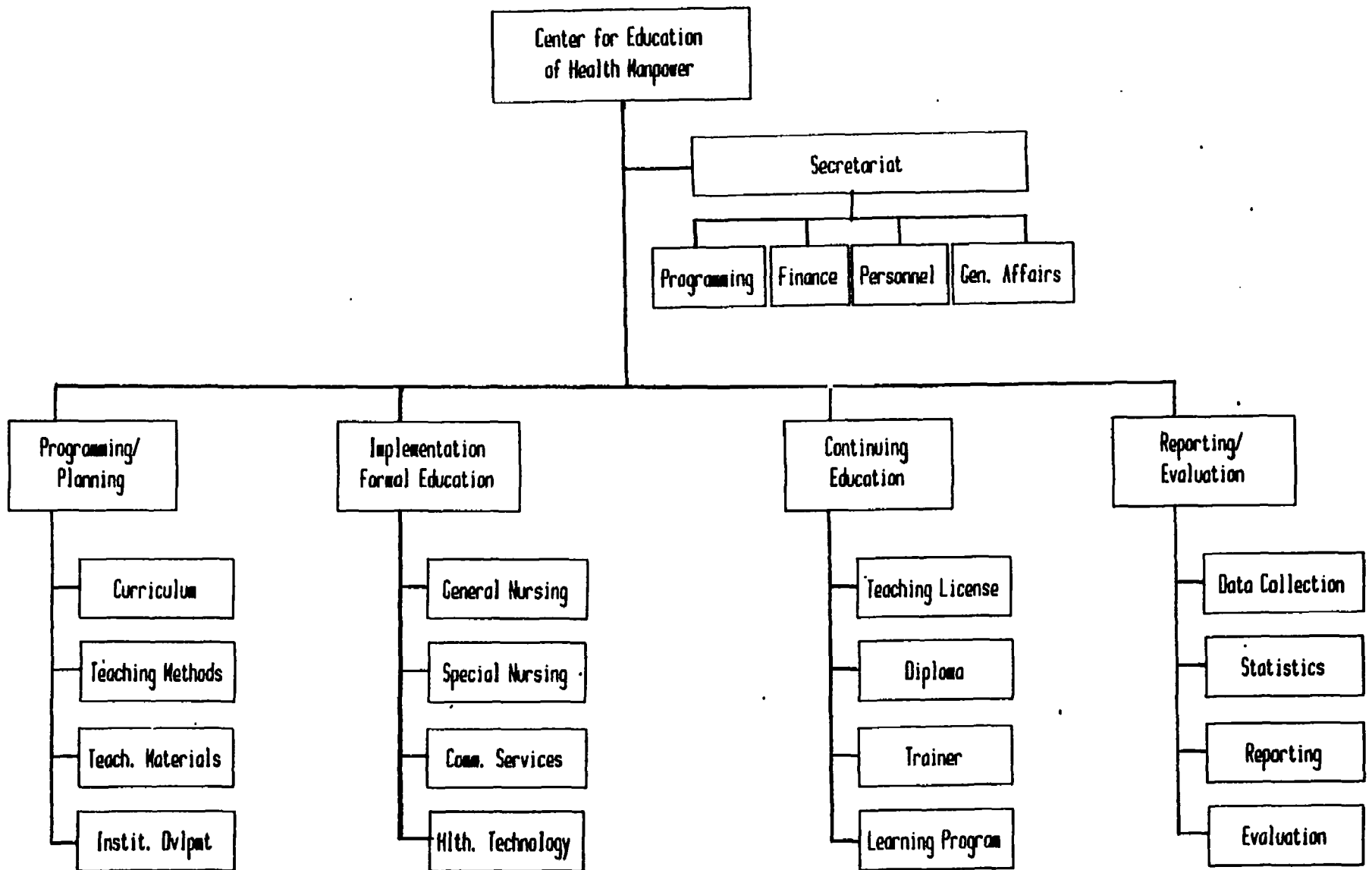
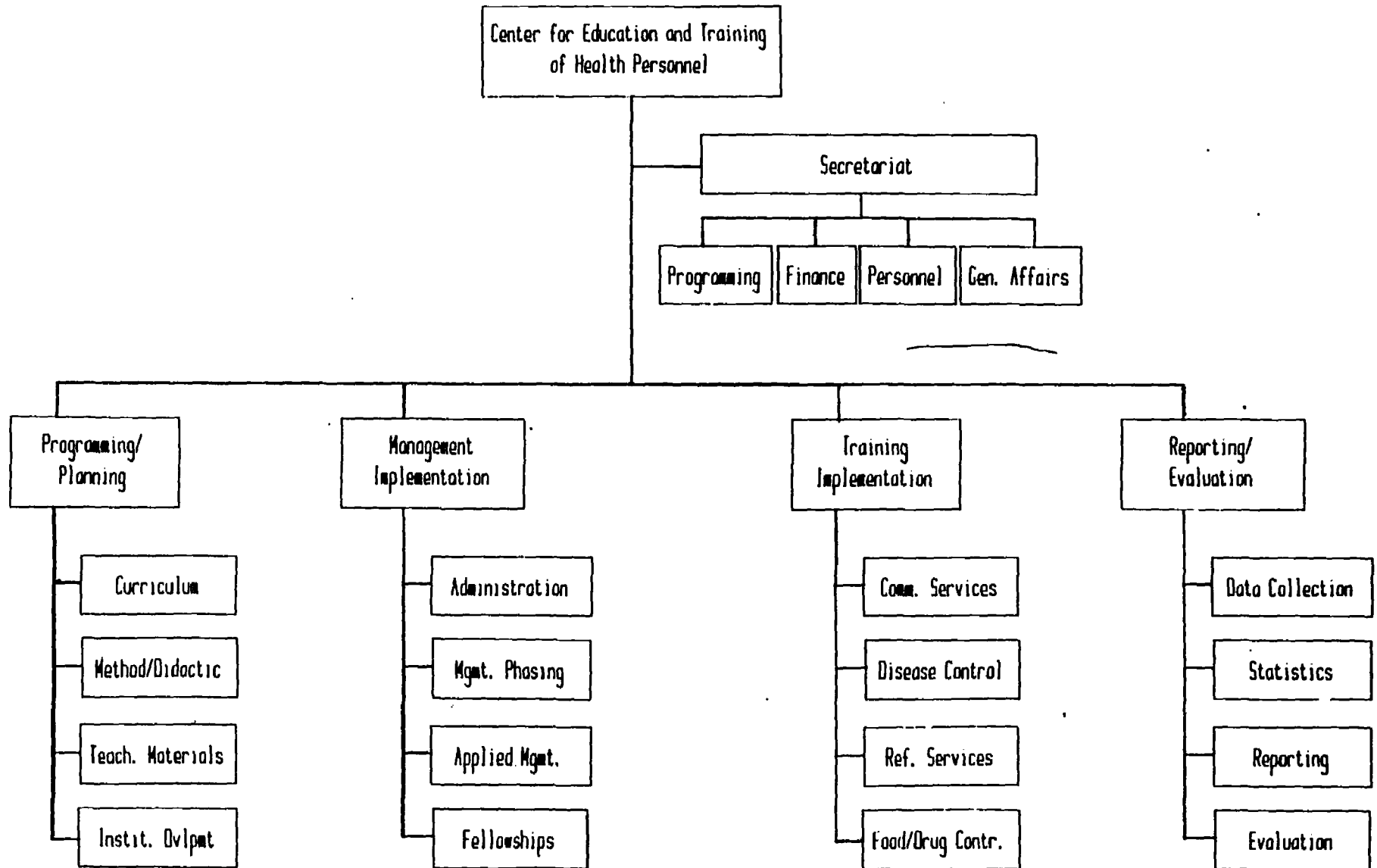
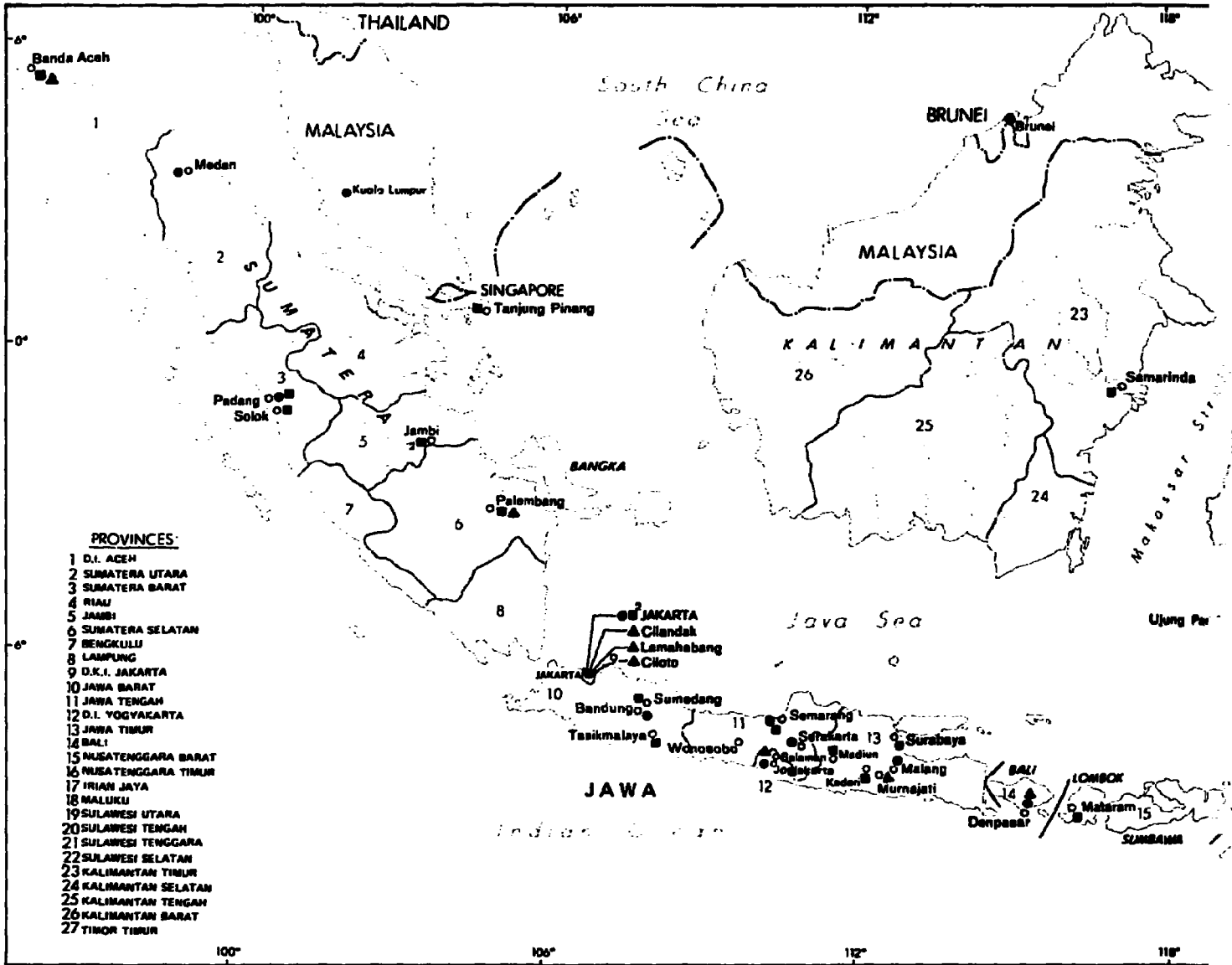


Chart 2

INDONESIA  
HEALTH (MANPOWER DEVELOPMENT) PROJECT  
C-3: The Center for Education and Training of Health Personnel

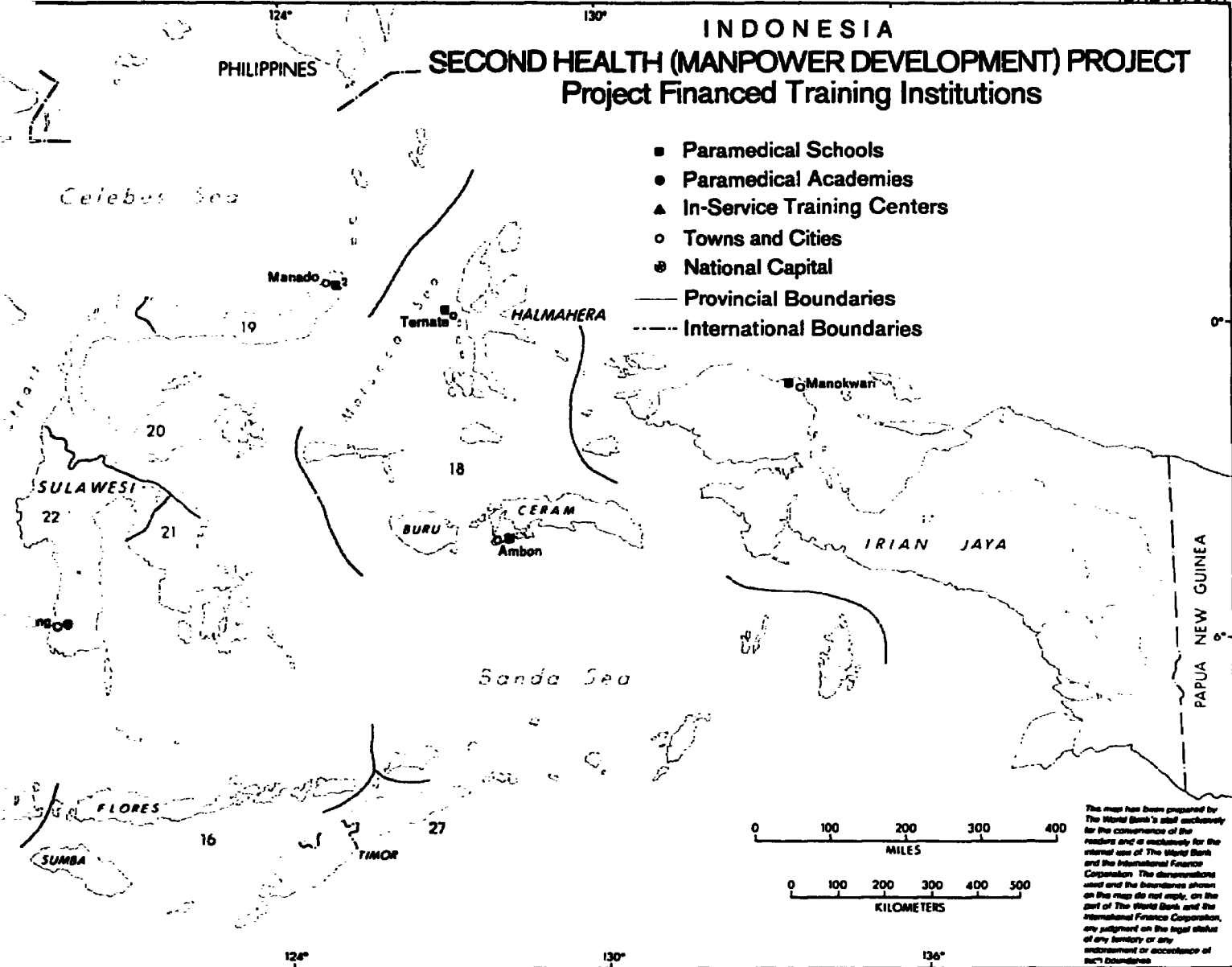




- PROVINCES:**
- 1 D.I. ACEH
  - 2 SUMATERA UTARA
  - 3 SUMATERA BARAT
  - 4 RIAU
  - 5 JAMBI
  - 6 SUMATERA SELATAN
  - 7 BENGKULU
  - 8 LAMPUNG
  - 9 D.K.I. JAKARTA
  - 10 JAWA BARAT
  - 11 JAWA TENGAH
  - 12 D.I. YOGYAKARTA
  - 13 JAWA TIMUR
  - 14 BALI
  - 15 NUSATenggara BARAT
  - 16 NUSATenggara TIMUR
  - 17 IRIAN JAYA
  - 18 MALLIKU
  - 19 SULAWESI UTARA
  - 20 SULAWESI TENGAH
  - 21 SULAWESI TENGGARA
  - 22 SULAWESI SELATAN
  - 23 KALIMANTAN TIMUR
  - 24 KALIMANTAN SELATAN
  - 25 KALIMANTAN TENGAH
  - 26 KALIMANTAN BARAT
  - 27 TIMOR TIMUR

# INDONESIA SECOND HEALTH (MANPOWER DEVELOPMENT) PROJECT Project Financed Training Institutions

- Paramedical Schools
- Paramedical Academies
- ▲ In-Service Training Centers
- Towns and Cities
- ⊙ National Capital
- Provincial Boundaries
- - - International Boundaries



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